

PUBLICATIONS OF PROF. G.F. PANZA

1969

Boschi, E. and Panza, G.F., (1969). Estimate of some measurable quantities on the Moon.

Geofis. Meteor., 18, 69-72.

Boschi, E., Caputo, M. and Panza, G.F., (1969). Stability of seismic activity in Italy with special reference to Garfagnana, Mugello and Forlivese.

Comitato Nazionzle Energia Nucleare, 24, 1-24.

1970

Caputo, M. and Panza G.F., (1970). The Moon after satellites Luna 10 and Lunar Orbiter I, III, IV.

Ist. Naz, Alta Mat., Symp., Math., 3, 97-119.

Caputo, M., Panza, G.F. and Postpischl, D., (1970). Deep structure of the Mediterranean basin.

J. Geophys. Res., 75, 4919-4923.

Levshin, A.L. and Panza, G.F., (1970). Further remarks on extra roots of Rayleigh equation and Somigliana waves.

Ann. Geof., 23, 45-55.

1972

Caputo, M., Panza, G.F. and Postpischl, D., (1972). New evidences about the deep structure of the Lipari Arc.

Tectonophysics, 15, 219-231.

Panza, G.F., Schwab, F. and Knopoff, L., (1972). Channel and Crustal Rayleigh waves.

Geophys. J. R. astr. Soc., 30, 273-280.

1973

Caputo, M., Keilis-Borok, V., Kronrod, R., Molchan, G., Panza, G.F., Piva, A., Podgaezkaya, V. and Postpischl, D., (1973). Models of earthquake occurrence and isoseismals in Italy.

Ann. Geof. 26, 421-444.

Panza, G.F., Schwab, F. and Knopoff, L., (1973). Multimode surface waves for selected focal mechanism. I. Dip-slip sources on a vertical fault plane.

Geophys. J. R. astr. Soc., 34, 265-278.

Calcagnile, G. and Panza, G.F., (1973). Magnitude from Rayleigh waves: time domain analysis of the influence of source parameters and structure.

Riv. It. Geofis., 22, 117-120.

Caputo, M., Keilis-Borok, V., Kronrod, R., Molchan, G., Panza, G.F., Piva, A., Podgaezkaya, V. and Postpischl, D., (1973). Seismicheskii risk na territorii zentralnoi Italii.

Vychislitelnie i Ctatisticheskii Metodi Interpretazii Ceicmicheckic Dannic, vol. 6 (in Russian), (Edited by V. Keilis-Borok), Nauka, Moscow, 97-106.

1974

Caputo, M., Keilis-Borok, V.I., Kronrod, T.L., Molchan, G.M., Panza, G.F., Piva, A., Podgaezkaya, V.M. and Postpischl, D., (1974). The estimation of seismic risk for Central Italy.

Ann. Geof., 27, 349-365.

Panza, G.F. and Calcagnile, G., (1974). Some remarks about the focal effect on the magnitude determination from Rayleigh waves.

Geol. Inst. Tech. Econ. St., Geophys. Prosp., 10, 328-334.

Panza, G.F., (1974). Focal-mechanism determination from multimode Rayleigh wave response.

Phys. Earth. Plan. Int., 8, 345-351.

Panza, G.F. and Calcagnile, G., (1974). Comparison of the multimode surface wave response in structures with and without a low velocity channel. (Part I: Dip-slip sources on a vertical fault plane).

Pageoph, 112, 583-596.

Panza, G.F. and Calcagnile, G., (1974). Crustal structure along the coasts of California from Rayleigh waves.

Phys. Earth. Plan. Int., 9, 137-140.

Calcagnile, G. and Panza, G.F., (1974). Vertical and SV components of Sa.

Geophys. J. R. astr. Soc., 38, 317-325.

Panza, G.F. and Calcagnile, G., (1974). Comparison of the multimode surface wave response in structures with and without a low-velocity channel (Part II: Dip-slip sources).

Pageoph, 112, 1031-1043.

1975

Panza, G.F. and Calcagnile, G., (1975). Lg, Li and Rg from Rayleigh modes.

Geophys. J.R. astr. Soc., 40, 475-487.

Calcagnile, G. and Panza, G.F., (1975). Further considerations on Rayleigh-type Sa waves.

Proc. NATO A.S.I. - Exploitation of seismograph networks, Serie E-11, 629-636, ed. Beauchamp, Noordhoff-Leiden.

Panza, G.F., Schwab, F. and Knopoff, L., (1975). Multimode surface waves for selected focal mechanisms- II. Dip-slip sources.

Geophys. J. R. astr. Soc., 42, 931-943.

Panza, G.F., Schwab, F. and Knopoff, L., (1975). Multimode surface waves for selected focal mechanisms- III. Strike-slip sources.

Geophys. J. R. astr. Soc., 42, 945-955.

Panza, G.F. and Calcagnile, G., (1975). Comparison of the multimode surface wave response in structures with and without a low-velocity channel (Part III: Strike-slip sources).

Pageoph, 113, 661-671.

1976

Nolet, G. and Panza, G.F., (1976). Array analysis of seismic surface waves: limits and possibilities.

Pageoph, 114, 775-790.

Calcagnile, G., Panza, G.F., Schwab, F and Kausel, E.G., (1976). On the computation of theoretical seismograms for multimode surface waves.

Geophys. J. R. astr. Soc., 47, 73-81.

Panza, G.F., (1976). Phase velocity determination of fundamental Love and Rayleigh waves.

Pageoph, 114, 753-764.

Calcagnile, G. and Panza, G.F., (1976). Seismicity and seismic risk in the Gargano Region in relation to its gravitational anomalies.
Riv. It. Geofis., 3, 61-66.

Caputo, M., Knopoff, L., Mantovani, E., Mueller, St. and Panza, G.F., (1976). Rayleigh wave phase velocities and upper mantle structure in the Apennines.
Ann. Geof., 29, 199-214.

1977

Calcagnile, G., Del Prete, M., Monterisi, L. and Panza, G.F., (1977). Seismic risk of Basilicata in its geostructural frame.
Boll. Geof. Teor. App., 19, 117-139.

Knopoff, L. and Panza, G.F., (1977). Resolution of upper mantle structure using higher modes of Rayleigh waves.
Ann. Geof., 30, 491-505.

1978

Calcagnile, G., Melidoro, G., Panza, G.F. and Salviola, G., (1978). Studio introduttivo alla correlazione fra movimenti franosi e attivita' sismica nell'Appennino Centro-Meridionale.
Geol. Appl. Idrogeol., 13, 159-183.

Panza, G.F., (1978). The crust and upper mantle in Southern Italy from geophysical data.
Riv. It. Geof., 5, 17-22.

Panza, G.F. and Scalera, G., (1978). Higher modes dispersion measurement.
Pageoph, 116, 1274-1283.

Panza, G.F., Neunhöfer, H. and Calcagnile, G., (1978). Contribution to phase velocity investigation of Rayleigh-waves in Middle Europe.
Pageoph, 116, 1299-1306.

Nolet, G., Panza, G.F. and Wortel, R., (1978). An averaged model for the Adriatic subplate.
Pageoph, 116, 1248-1298.

Calcagnile, G. and Panza, G.F., (1978). Crust and upper mantle structure under the Baltic shield and Barents sea from the dispersion of Rayleigh waves.

Tectonophysics, 47, 59-71.

Panza, G.F. and Mueller, S., (1978). The plate boundary between Eurasia and Africa in the Alpine Area. Mem. Sc. Geol., 33, 43-50.

1979

Calcagnile, G., Calo', G., Canziani, R. and Panza, G.F., (1979). Lo studio dei fenomeni franosi con metodi geofisici speditivi.

Geol. Appl. Idrogeol., 14, 1-12.

Calcagnile, G., Canziani, R., Monterisi, R. and Panza, G.F., (1979). Potere risolutivo di sondaggi bipolari.

Geol. Appl. Idrogeol., 14, 181-189.

Calcagnile, G., Panza, G.F. and Knopoff, L., (1979). Upper mantle structure of North-Central Italy from the dispersion of Rayleigh waves.

Tectonophysics, 56, 51-63.

Panza, G.F., and Calcagnile, G., (1979). The upper mantle structure in Balearic and Tyrrhenian bathyal plains and the Messinian salinity crisis.

Palaeogeography, Palaeoecology, Palaeoclimatology, 29, 3-14.

Calcagnile, G. and Panza, G.F., (1979). Crustal and upper mantle structure beneath the Apennines region as inferred from the study of Rayleigh waves.

J. Geophys., 45, 319-327.

1980

Porter, L.D., Schwab, F., Nakanishi, K.K., Weeks, I.F., Panza, G.F., Mantovani, E., McMenamin, D., Smythe, W.D., Liao, A.H., Landoni, J.A., Biswas, N.N., Chang, F.-S., Bor, S.S., Kausel, E., Gasperini, P. and Luthey, J.L., (1980). Relative computer speeds for surface-wave dispersion computations.

Bull. Seism. Soc. Am., 70, 1415-1420.

Calcagnile, G. and Panza, G.F., (1980). Upper mantle structure of the Apulian plate from Rayleigh waves.

Pageoph, 118, 823-830.

Panza, G.F., (1980). Evolution of the Earth's lithosphere.

NATO Adv. Stud. Inst. Newcastle, 1979.

In: Mechanisms of Continental Drift and Plate Tectonics. Ed. by: P.A.

- Davies and S.K. Runcorn, Academic Press, 75-87.
- Panza, G.F., Calcagnile, G., Scandone, P. and Mueller, S., (1980). La struttura profonda dell' Area Mediterranea.
Le Scienze, 141, 60-69.
- Panza, G.F., Mueller, St. and Calcagnile, G., (1980). The gross features of the lithosphere-asthenosphere system in Europe from seismic surface waves and body waves.
Pageoph, 118, 1209-1213.
- D'Ingeo, F., Calcagnile, G. and Panza, G.F., (1980). On the fault-plane solutions in the Central-Eastern Mediterranean region.
Boll. Geof. Teor. Appl., 22, 13-22.

1981

- Schwab, F., Frez, J., Panza, G.F., Liao, A.H. and Kausel, E.G., (1981). Surface-wave dispersion computations: Rayleigh waves on a spherical, gravitating Earth.
Bull. Seism. Soc. Am., 71, 613-654.
- Calcagnile, G., Fabbri, A., Farsi, F., Galignani, P., Gasparini, C., Innaccone, G., Mantovani, E., Panza, G.F., Sartori, R., Scandone, P and Scarpa, R., (1981). Structure and evolution of the Tyrrhenian basin.
Rapp. Comm. Int. Mer Medit., 27, 197-208.
- Calcagnile, G. and Panza, G.F., (1981). The main characteristics of the lithosphere-asthenosphere system in Italy and surrounding regions.
Pure Appl. Geophys., 119, 865-879.
- Cuscito, M. and Panza, G.F., (1981). Determinazione simultanea del momento sismico e dei parametri strutturali usando sismogrammi sintetici completi.
Rend. Soc. Geol. It., 4, 477-478.
- Farrugia, P. and Panza, G.F., (1981). Continental character of the lithosphere beneath the Ionian sea.
In: The solution of the Inverse Problem in Geophysical Interpretation. Ed. by: R. Cassinis, Plenum Pub. Corp., 327-334.
- Italian Explosion Seismology Group and Institute of Geophysics, ETH, Zürich, (1981). Crust and upper mantle structures in the southern Alps from deep seismic sounding profiles (1977, 1978) and surface wave dispersion analysis.
Boll. Geof. Teor. Appl., 23, 297-330.

Neunhöfer, H., Marillier, F. and Panza, G.F., (1981). Crust and upper mantle structure in the Bohemian massif from the dispersion of Rayleigh waves.

Gerlands Beitrage Geophysik, 90, 514-520.

Panza, G.F., (1981). The resolving power of seismic surface waves with respect to crust and upper mantle structural models.

In: The Solution of the Inverse Problem in Geophysical Interpretation. Ed. by: R. Cassinis, Plenum Pub. Corp., 39-77.

Panza, G.F., Scandone, P. and Scarpa, R., (1981). Sul comportamento dinamico della litosfera nell'area italiana.

Rend. soc. Geol. It., 4, 571-572.

Scalera, G., Calcagnile, G. and Panza, G.F., (1981). Lateral variations of the "400-kilometers" discontinuity in the Mediterranean area.

Boll. Geof. Teor. Appl., 23, 11-16.

Scalera, G., Calcagnile, G. and Panza, G.F., (1981). On the "400-kilometers" discontinuity in the Mediterranean area. In: The Solution of the Inverse Problem in Geophysical Interpretation. Ed. by: R. Cassinis, Plenum Pub. Corp., 335-339.

1982

Calcagnile, G., Canziani, R., Del Gaudio, V., Guerricchio, A., Melidoro, G., Panza, G.F. and Ruina, G., (1982). Indagini gravimetriche nell'area franosa di Pisticci (Lucania).

Geol. Appl. Idrogeol., 17, 127-149.

Calcagnile, G., Canziani, R., Del Gaudio, V., Guerricchio, A., Melidoro, G., Panza, G.F. and Ruina, G., (1982). First application of the gravimetric method to the study of landslide bodies.

Proc. 4th Int. Congr. IAEG, 3, 129-134.

Calcagnile, G., D'Ingeo, F., Farrugia, P. and Panza, G.F., (1982). The lithosphere in the central-eastern Mediterranean area.

Pure Appl. Geophys., 120, 389-406.

Panza, G.F., Calcagnile, G., Scandone, P. and Mueller, S., (1982). Die Geologische Tiefenstruktur des Mittelmeerraumes.

Spektrum Wissen., 1, 18-28.

Panza, G.F. and Cuscito, M., (1982). Influence of focal mechanism on shape of isoseismals: Irpinia earthquake of November 23, 1980.
Pure Appl. Geophys., 120, 577-582.

Panza, G.F., Mueller, S., Calcagnile, G. and Knopoff, L., (1982). Delineation of the north central Italian upper mantle anomaly.
Nature, 296, 238-239.

Suhadolc, P., Zadro, M. and Panza, G.F., (1982). Seismic behaviour of the Gargano region: statistical analysis.
Geol. Appl. Idrogeol., 17, 195-200.

1983

Suhadolc, P. and Panza, G.F., (1983). Seismicity pattern before the 1980 Irpinia, Italy, earthquake.
Annales Geophysicae, 1, 217-222.

Suhadolc, P., Zadro, M. and Panza, G.F., (1983). Seismic behaviour of the Gargano region in the frame of the southern Apennines seismicity.
Boll. Geof. Teor. Appl., 25, 97-100.

Panza, G.F., (1983). Lateral variations in the European lithosphere and seismic activity.
Phys. Earth Planet. Int., 33, 194-197.

Ciaranfi, N., Guida, M., Iaccarino, G., Pescatore, T., Pieri, P., Rapisardi, L., Ricchetti, G., Sgrosso, I., Torre, M., Tortorici, L., Turco, E., Scarpa, R., Cuscito, M., Guerra, I., Iannaccone, G., Panza, G.F. and Scandone, P., (1983). Elementi sismotettonici dell'Appennino Meridionale.
Boll. Soc. Geol. It., 102, 201-222.

1984

Calcagnile, G., Mascia, U., Del Gaudio, V. and Panza, G.F., (1984). Deep structure of southeastern Europe from Rayleigh waves.
Tectonophysics, 110, 189-200.

Panza, G.F., (1984). Structure of the lithosphere-asthenosphere system in the Mediterranean region.
Annales Geophysicae, 2, 137-138.

Panza, G.F., (1984). La litosfera sotto gli oceani e i continenti.
Scienza e Tecnica, 84, 81-84.

Panza, G.F., (1984). Contributi geofisici alla geologia: stato attuale dell'arte e prospettive future.

In: Cento anni di Geologia Italiana. Vol. Giub. I Centenario S.G.I., 363-376,
Pitagora, Bologna.

Panza, G.F., (1984). The deep structure of the Mediterranean-Alpine region and large shallow earthquakes. Mem. Soc. Geol. It., 29, 5-13.

Schwab, F., Nakanishi, K., Cuscito, M., Panza, G.F., Liang, G. and Frez, J., (1984). Surface-wave computations and the synthesis of theoretical seismograms at high frequencies.

Bull. Seism. Soc. Am., 74, 1555-1578.

Panza, G.F. and D'Ingeo, F., (1984). A model for the dynamic behaviour of the lithosphere in the Mediterranean region as a guide for the determination of the areas of high seismic hazard.

Atti Conf. Int. Zone Sismiche Area Mediterranea, Matera, 16-18 Nov. 1981,
59-64.

1985

Mantovani, E., Nolet, G. and Panza, G.F., (1985). Lateral heterogeneity in the crust of the Italian region from regionalized Rayleigh-wave group velocities. Annales Geophysicae, 3, 519-530.

Panza, G.F., (1985). Synthetic seismograms: the Rayleigh waves modal summation.

J. Geophys., 58, 125-145.

Costa, G. and Panza, G.F., (1985). Modi di oscillazione di strutture di tipo oceanico.

Atti 3° Convegno Gruppo Nazionale Geofisica Terra Solida, Roma, 1057-1074.

Panza, G.F., (1985). Un metodo molto efficiente per la costruzione di sismogrammi sintetici completi per modelli anelastici della terra.

Atti 3° Convegno Gruppo Nazionale Geofisica Terra Solida, Roma, 1027-1037.

Chiaruttini, C. and Panza, G.F., (1985). Onde guidate in mezzi stratificati con particolare riguardo alla propagazione in strati sedimentari.

Atti 3° Convegno Gruppo Nazionale Geofisica Terra Solida, Roma, 1039-1056.

Chiaruttini C., Costa G. and Panza G.F., (1985). Wave propagation in multilayered media: the effect of waveguides in oceanic and continental Earth models.

J. Geophys, 58, 189-196.

Suhadolc, P. and Panza, G.F., (1985). Applicazione della sismosintesi ad esperimenti di sismica attiva.

Atti 3° Convegno Gruppo Nazionale Geofisica Terra Solida, Roma, 1075-1091.

Suhadolc, P. and Panza, G.F., (1985). Some applications of seismogram synthesis through the summation of modes of Rayleigh waves.

J. Geophys, 58, 183-188.

Panza, G.F., (1985). Lateral variations in the lithosphere in correspondence of the southern segment of EGT.

second EGT-Workshop: The Southern Segment, Venice 7-9 Feb. 1985, ed. by: S. Mueller and D.A. Galson, European Science Foundation, 47-51.

1986

Panza, G.F., Suhadolc, P. and Chiaruttini, C., (1986). Exploitation of broad-band network through broad-band synthetic seismograms.

Annales Geophysicae, 4, 315-328.

Mueller, S. and Panza, G.F., (1986). Evidence of a deep-reaching lithospheric root under the Alpine Arc.

In: The Origin of Arcs, ed. by: F.C. Wezel, Elsevier, 21, 93-113.

Marson, I., Panza, G.F., Suhadolc, P. and Calocchio, D., (1986). Sismogrammi sintetici applicati alla definizione della distribuzione in profondita' della velocita' delle onde S ed esperimenti DSS.

Atti 4° Convegno GNGTS-CNR, Roma., 581-588.

Chiaruttini, C., Panza, G.F. and Prozorov, A., (1986). Precursori sismici a lungo termine per l'area italiana.

Atti 4° Convegno GNGTS-CNR, Roma., 365-370.

1987

Panza, G.F. and Suhadolc, P., (1987). Complete strong motion synthetics. In: Computational techniques, Vol. 4, Seismic strong motion synthetics, ed. by: B.A. Bolt, 153-204, Academic Press.

Calcagnile, G. and Panza G.F., (1987). Properties of the Lithosphere-Asthenosphere system in Europe with a view toward Earth conductivity. *Pageoph*, 125, 241-254.

1988

Suhadolc, P., Vaccari, F. and Panza, G.F., (1988). Strong motion modeling of the rupturing process of the November 23, 1980 Irpinia, Italy, earthquake. In: (J. Bonnin, M. Cara, A. Cisternas and R. Fantechi, eds.) *Seismic Hazard in Mediterranean regions*, 105-128, Kluwer, Dordrecht.

Suhadolc, P., Cernobori, L., Pazzi, G. and Panza, G.F., (1988). Synthetic isoseismals: application to Italian earthquakes. In: (J. Bonnin, M. Cara, A. Cisternas and R. Fantechi, eds.) *Seismic Hazard in Mediterranean regions*, 205-228, Kluwer, Dordrecht.

Costa, G. and Panza, G.F., (1988). Multilayered liquid and solid oceanic models surface-wave computation. *Studi e Ricerche* (Ed. M. Unguendoli), 273-292, C.U.S.L. Bologna.

Gregersen, S., Panza, G.F. and Vaccari, F., (1988). Developments toward computations of synthetic seismograms in laterally inhomogeneous anelastic media.

Phys. Earth Planet. Int., 51, 55-58.

Panza, G.F. and Suhadolc, P., (1988). Prediction of strong ground motion and macroseismic intensity from assigned source and structural models.

Senior Adv. ECE Governments on Science and Technology, Lisbon 1988, *Sc.Tech./Sem.16/R.21*, pp16.

Suhadolc, P. and Panza, G.F., (1988). The European-African collision and its effects on the lithosphere-asthenosphere system.

Tectonophysics, 146, 59-66.

Suhadolc, P., Panza, G.F. and Mueller, St., (1988). Lateral variations of the lithosphere-asthenosphere system and plate boundaries in Europe.

In: Proc. Third Int. Conf. WEGENER/MEDLAS PROJECT, (Ed. P. Baldi and S. Zerbini), 53-60, Esculapio, Bologna.

Della Vedova, B., Marson, I., Panza, G.F. and Suhadolc, P., (1988). Upper mantle properties along a profile intersecting EGT (Corsica-Istria). Proceedings of the fourth EGT-Workshop: The Upper Mantle, Utrecht, 11-12 March 1988, ed. by G. Nolet and B. Dost, European Science Foundation, 93-97.

1989

Adám, A. and Panza, G.F., (1989). A critical review of the magnetotelluric information on the upper mantle. *Acta Geod. Geoph. Mont. Hung.*, 24, 395-415.

Costa, G. and Panza, G.F., (1989). Propagazione di onde P-SV in strutture oceaniche stratificate.

Atti 6° Convegno Gruppo Nazionale di Geofisica della Terra Solida, CNR, Roma, 1457-1464.

Craglietto, A., Panza, G.F., Mitchell, B.J. and Costa, G., (1989). Anelastic properties of the crust in the Mediterranean area. *American Geophysical Union Geophysical Monograph* 51, IUGG Vol.6, 179-196.

Craglietto, A., Panza, G.F., Mitchell, B.J. and Costa, G., (1989). Proprietà anelastiche della crosta nell'area mediterranea.

Atti 6° Convegno Gruppo Nazionale di Geofisica della Terra Solida, CNR, Roma 1465-1472.

Harabaglia, P., Suhadolc, P. and Panza, G.F., (1989). Il terremoto irpino del 23.11.1980: meccanismi di rottura dall'inversione di dati accelerometrici.

Atti 6° Convegno Gruppo Nazionale di Geofisica della Terra Solida, CNR, Roma, 119-124.

Furlan, M., and Panza G.F., (1989). Determinazione analitica dei coefficienti d'accoppiamento per la trattazione di eterogeneità laterali.

Atti 6° Convegno Gruppo Nazionale di Geofisica della Terra Solida, CNR, Roma, 1421-1432.

Latini, G., Marson, I., Panza, G.F. and Suhadolc, P., (1989). Modellazione fine dei parametri elastici ed anelastici della crosta terrestre mediante sismogrammi sintetici.

Atti 6° Convegno Gruppo Nazionale di Geofisica della Terra Solida, CNR, Roma, 805-820.

MacBeth, C. and Panza, G.F., (1989). Sintesi modale di onde ad alta frequenza in Scozia.

Atti 6° Convegno Gruppo Nazionale di Geofisica della Terra Solida, CNR, Roma, 1473-1476.

MacBeth, C. and Panza, G.F., (1989). Modal synthesis of high-frequency waves in Scotland.

Geophys. J., 96, 353-364.

Panza, G.F., Duda, S.J., Cernobori, L., and Herak, M., (1989). Gutenberg's surface-wave magnitude calibration function: Theoretical basis from synthetic seismograms.

Tectonophysics, 166, 35-43.

Panza, G.F., (1989). Attenuation measurements by multimode synthetic seismograms.

In: (ed: R. Cassinis, G. Nolet and G.F. Panza) Digital seismology and fine modeling of the lithosphere. Plenum Press, 79-115.

Panza G.F., Craglietto, A. and Suhadolc, P., (1989). Variazioni temporali di Q come precursori di grandi terremoti. Atti 6° Convegno Gruppo Nazionale di Geofisica della Terra Solida, CNR, Roma, 17-24.

Panza G. F., Craglietto, A. and Suhadolc, P., (1989). Influenza dei parametri di sorgente sulle caratteristiche del campo macrosismico.

Atti 6° Convegno Gruppo Nazionale di Geofisica della Terra Solida, CNR, Roma, 255-268.

Panza, G.F. and Suhadolc, P., (1989). Realistic simulation and prediction of strong ground motion. In: (G.M. Carlomagno and C.A. Brebbia, eds.). Computers and experiments in Stress Analysis, 77-98, Springer-Verlag.

Panza, G.F., Scandone, P., Calcagnile, G., Mueller, St., and Suhadolc, P., (1989). Modello strutturale: note illustrative del modello della litosfera in Italia e regioni circostanti. P.F. Geodinamica in stampa.

Vaccari, F., Gregersen, S., Furlan, M. and Panza, G.F., (1989). Synthetic seismograms in laterally heterogeneous, anelastic media by modal summation of P-SV waves. Geophys. J. Int., 99, 285-295.

Vaccari, F., Gregersen, S., Furlan, M. and Panza, G.F., (1989). Sismogrammi completi in mezzi anelastici lateralmente eterogenei. Atti 6° Convegno Gruppo Nazionale di Geofisica della Terra Solida, CNR, Roma, 1433-1446.

Della Vedova, B., Marson, I., Panza, G.F. and Suhadolc, P., (1989). Upper mantle properties of the Tuscan-Tyrrhenian area: a key for understanding the recent tectonic evolution of the Italian region, (extended abstract). Atti 7° Convegno Gruppo Nazionale di Geofisica della Terra Solida, CNR, Roma.

Suhadolc, P., and Panza, G.F., (1989). Physical properties of the lithosphere-asthenosphere system in Europe from geophysical data. In: (eds. A. Boriani, M. Bonafede, G.B. Piccardo and G.B. Vai) *The lithosphere in Italy - advances in Earth science research*. Acad. Naz. Lincei, Atti Conv. Lincei, 80, 15-40.

1990

Suhadolc, P., Panza, G.F. and Mueller, St., (1990). Physical properties of the lithosphere-asthenosphere system in Europe. *Tectonophysics*, 176, 123-136.

Calcagnile, G. and Panza, G.F., (1990). Crustal and upper mantle structure of the Mediterranean area derived from surface-wave data. *Phys. Earth Planet. Int.*, 60, 163-168

Yanovskaya, T. B., Panza, G.F., Ditmar, P.G., Suhadolc P., and Mueller, St., (1990). Structural heterogeneity and anisotropy based on 2-D phase velocity patterns of Rayleigh waves in Western Europe.
Atti Acad. Naz. Lincei, 1, 127-135.

Keilis-Borok V.I., Kuznetsov, I.V., Panza, G.F., Rotwain, I.M. and Costa, G., (1990). On intermediate-term earthquake prediction in Central Italy.
Pure Appl. Geoph., 134, 79-92.

Marson, I. and Panza, G.F., (1990). Aeromagnetic map of Italy reduced to the same elevation and to the Pole.
Atti Acad. Naz. Lincei, 1, 245-252.

Panza, G.F. and Suhadolc, P., (1990). Properties of the lithosphere in collisional belts in the Mediterranean - a review. *Tectonophysics*, 182, 39-46.

Vaccari, F., Fäh, D. and Panza, G.F., (1990). Somma multimodale e differenze finite nel calcolo di sismogrammi sintetici in mezzi lateralmente eterogenei. Atti 8° Convegno Gruppo Nazionale di Geofisica della Terra Solida, CNR, Roma.

Vaccari F., Suhadolc P. and Panza G.F., (1990). Irpinia, Italy, 1980 earthquake: waveform modeling of strong motion data. *Geophys. J. Int.* (1990) 101, 631-647.

Panza, G.F., Prozorov, A. and Suhadolc, P., (1990). Lithosphere structure and statistical properties of seismicity in Italy and surrounding regions. *Journal of Geodynamics*, 12, 189-215.

Panza, G.F. and Suhadolc, P., (1990). The Mediterranean area: a challenge for plate tectonics. In: (Ed: V. Belousov et al.) *Critical aspects of the Plate tectonics theory*, Vol. 1, Theophrastus Publications, S.A., Athens, 1990, 339-363.

Vaccari, F., Suhadolc, P. and Panza, G.F. (1990) . Irpinia 1980 earthquake : the rupturing process and the influence of source geometry on the macroseismic field. *Atti Convegno "Irpinia dieci anni dopo"*, 68-73.

Harabaglia, P., Suhadolc, P. and Panza, G.F., (1990). Rupture process dynamics from inversion of accelerometric data. *Atti Convegno "Irpinia dieci anni dopo"*, 73-77.

1991

Panza, G. F., (1991). The theory and some applications of synthetic seismograms to strong motion data and macroseismic informations. In: (Ed: R. Fantechi and M.E. Almeida-Teixeira) *Earthquake hazard assessment*, Proc. European School, Athens May 1988, Commission of the European Communities, 65-78.

Panza, G.F., Craglietto A., and Suhadolc P., (1991). Source geometry of historical events retrieved by synthetic isoseismals. *Tectonophysics*, 193, 173-184.

Latini, G., Marson, I., Panza, G.F. and Suhadolc, P., (1991). Fine modeling of elastic and anelastic parameters of the earth's crust by means of complete synthetic seismograms. In (P.Giese et al. Eds) *Joint Interpretation of Geophysical and Geological Data Applied to Lithospheric studies*. Kluwer, 93-107.

Fäh, D., Suhadolc, P. and Panza, G.F., (1991). Estimation of strong ground motion in laterally heterogeneous media: modal summation-finite difference approach. *Proc. Europ. Conf. on Earthquake Engineering*, Kucherenko Tsnisk USSR Gosstroy, Moscow, 4A, 100-109, 1990.

Fäh, D., Suhadolc, P. and Panza G.F., (1991). Estimation of strong ground motion in one- and two-dimensional media. *Proceedings SEISMED Workshop II on Seismic Vulnerability and Risk Assessment*, Trieste 1990, UNDRO/UNDP(OPS)-SEISMED, Switzerland, 619- 634.

Suhadolc, P., Harabaglia, P. and Panza, G.F., (1991). Deterministic modeling and estimate of strong ground motion: the Irpinia, Italy, November 23, 1980 earthquake. Proc. Europ. Conf. on Earthquake Engineering, Kucherenko Tsniisk USSR Gosstroy, Moscow, 4A, 110-120, 1990.

Della Vedova, B., Marson, I., Panza, G.F. and Suhadolc, P., (1991). Upper mantle properties of the Tuscan-Tyrrhenian area: a framework for its recent tectonic evolution. *Tectonophysics*, 195, 311-318.

Panza, G.F., Prozorov, A. and Suhadolc, P., (1991). Is there a correlation between lithosphere structure and the statistical properties of seismicity? *Terra Nova*, 2, 585-595.

Panza, G.F. and Prozorov, A., (1991). High frequency seismic sources characterize the areas of tectonic shortening in the Italian region.

Atti Acad. Naz. Lincei, 2, 107-116.

Sileny, J. and Panza, G.F., (1991). Inversion of seismograms to determine simultaneously the moment tensor components and source time function for a point source buried in a horizontally layered medium. *Studia Geophysica et Geodaetica*, 35, 166-183.

Florsch, N., Fäh, D., Suhadolc, P. and Panza, G.F., (1991). Complete synthetic seismograms for high-frequency multimode SH-waves.

Pageoph, 136, 529-560.

1992

Sileny, J., Panza, G.F. and Campus, P., (1992). Waveform inversion for point source moment tensor retrieval with variable hypocentral depth and structural model.

Geophys. J. Int., 109, 259-274.

Panza, G.F., Iodice, C., Fäh, D. and Suhadolc, P., (1992). E' possibile effettuare la zonazione sismica di Roma utilizzando i dati geotecnici e di sismicità attualmente disponibili? *l'Ingegnere Italiano*, 233, 13-20.

Iodice, C., Fäh, D., Suhadolc, P. and Panza, G.F., (1992). Un metodo generale per la zonazione sismica immediata ed accurata di grandi metropoli: applicazione alla città di Roma.

Atti Acad. Naz. Lincei, 3, 195-217.

Panza, G.F., Suhadolc, P., Costa, G., Vaccari, F., Harabaglia, P., Mao, W.J. and Fäh, D. (1992). Metodologia per lo studio dei processi alla sorgente, forme d'onda e macrosismica. *Atti Convegno Pisa GNDT*, 1, 103-118.

Suhadolc, P., Panza, G.F., Marson, I., Costa, G. and Vaccari, F., (1992). Analisi della sismicità e meccanismi focali nell'area italiana. *Atti Convegno Pisa GNDT*, 1, 157-168.

Costa, G., Panza, G.F., Suhadolc, P. and Vaccari, F., (1992). Zoning of the Italian region with synthetic seismograms computed with known structural and source information. *Proc. 10th WCEE*, July 1992, Madrid, Balkema, 435-438.

Costa, G., Panza, G.F. and Rotwain, I.M., (1992). Time of increased probability for earthquakes with $M \geq 5.6$ in Central Italy. *Proc. Int. Conference on Earthquake prediction: State-of-the-art*, Strasbourg 1991, 27-36.

Mohan, G., Rai, S.S. and Panza, G.F., (1992). Seismic heterogeneities in the Indian lithosphere. *Physics of Earth and Planetary Interiors*, 73, 189-198.

1993

Panza, G.F., Prozorov, A.G. and Pazzi, G., (1993). Extension of global creepex definition (MS-mb) to local studies (Md-ML): the case of the Italian region. *Terra Nova*, 5, 150-156.

Vaccari, F. and Panza, G.F., (1993). V_p/V_s estimation in southwestern Europe from P-wave tomography and surface-wave tomography analysis. *Physics of Earth and Planetary Interiors*, 78, 229-237.

Panza, G.F., Suhadolc, P. and Harabaglia, P., (1993). Uncertainties in the estimate of strong ground motion in the surroundings of a large earthquake, in J. Nemeč et al (eds.) *Prediction and Perception of natural Hazards*, Kluwer Academic Publishers, 153-158.

Vaccari, F., Harabaglia, P., Suhadolc, P. and Panza, G.F., (1993). The Irpinia (Italy) 1980 earthquake: Waveform modeling of accelerometric data and macroseismic considerations. *Ann. Geofis.*, 36, 93-108.

Fäh, D., Iodice, C., Suhadolc, P. and Panza, G.F., (1993). A new method for the realistic estimation of seismic ground motion in megacities: the case of Rome. *Earthquake Spectra*, 9, 643-667.

Costa, G., Panza, G.F., Suhadolc, P. and Vaccari, G., (1993). Zoning of the Italian territory in terms of expected peak ground acceleration derived from complete synthetic seismograms. *Int. J. Appl. Geophys.*, 30, 149-160.

Fäh, D., Suhadolc, P. and Panza, G.F., (1993). Variability of seismic ground motion in complex media: the case of a sedimentary basin in the Friuli (Italy) area. *Int. J. Appl. Geophys.*, 30, 131-148.

Panza, G.F., Sileny, J., Campus, P., Nicolich, R. and Ranieri, G., (1993). Point source moment tensor retrieval in volcanic, geothermal and orogenic areas by complete waveform inversion. *Int. J. Appl. Geophys.*, 30, 98-118.

Costa, G., Vuan, A. and Panza, G.F., (1993). Studio delle proprietà elastiche ed anelastiche del Friuli attraverso eventi registrati dalla stazione a larga banda di Trieste. *Studi Geol. Camerti*, ed. R. Capozzi e A. Castellarin, 65-70.

Suhadolc, P., Campus, P., Panza, G.F., (1993). Inversione lineare di forme d'onda per la ricostruzione del processo di sorgente: confronto di due metodi applicati ad eventi del Friuli. *Studi Geol. Camerti*, eds. R. Capozzi e A. Castellarin, 59-64.

Vorobieva, I. and Panza, G.F., (1993). Prediction of the occurrence of related strong earthquakes in Italy. *Pure Appl. Geophys.*, 141, 25-41.

Panza, G. F., (1993). Structure of the lithosphere inferred from surface waves. *Acta Geod. Geoph. Mont. Hung.*, 28, 257-288.

Suhadolc, P., Marson, I. and Panza, G.F., (1993). Crust and upper mantle structural properties along the active Tyrrhenian rim. *Acta Geod. Geoph. Mont. Hung.*, 28, 307-321.

Panza, G.F., Prozorov, A. and Pazzi, G., (1993). Areas of tectonic shortening in the Italian region are marked by high frequency seismic sources. *Acta Geod. Geoph. Mont. Hung.*, 28, 289-298.

Panza, G.F., (1993). Synthetic seismograms from multimode summation - Theory and computational aspects. *Acta Geod. Geoph. Mont. Hung.*, 28, 197-247.

Mao, W. J., Suhadolc, P. and Panza, G.F., (1993) Waveform inversions for the reconstruction of the source process : application to Friuli (Italy) events. *International conference on Continental Earthquakes, IASPEI Publication Series for the IDNDR*, 3, 307-313.

Fäh, D., Iodice, C., Suhadolc, P. and Panza, G.F., (1993). Estimation of seismic ground motion in Rome. International conference on Continental Earthquakes, IASPEI Publication Series for the IDNDR, 3, 449-457.

Costa, G., Panza, G.F., Suhadolc, P. and Vaccari, F. (1993). Zoning of the Italian territory in terms of estimated peak ground acceleration. International conference on continental Earthquakes, IASPEI Publication Series for the IDNDR, 3, 458-468.

1994

Russi, M., Febrer, J., Costa, G., Nieto, D.Y. and Panza, G.F., (1994). Analysis of digital waveforms recorded at seismographic station Esperanza. Terra Antarctica, 1, 162-166.

Mao, W.J., Panza, G.F. and Suhadolc, P., (1994). Linearized waveform inversion of local and near-regional events for source mechanism and rupturing processes. Geophysics Journal Int., 116, 784-798.

Fäh, D., Suhadolc, P., Mueller, St., and Panza, G.F., (1994). A hybrid method for the estimation of ground motion in sedimentary basins: Quantitative modeling for Mexico City. Bull. Seism. Soc. Am., 84, 383-399.

Costa, G. and Panza, G.F., (1994). Modeling of the acoustic propagation in sea water, considering the interactions with the anelastic sediments. Proc. 2nd European Conference on Underwater Acoustic, Ed. L. Bjorno, Copenhagen, 1, 399-406.

Campus, P., Cespuglio, G, and Panza, G.F., (1994). Full moment tensor retrieval and fluid dynamics in volcanic areas: the case of Phlegrean Fields (South Italy). In: Large explosive eruptions, Atti Conv. Lincei, 112, 81-101.

Romanelli, F., and Panza., G.F., (1994). Extension of Love wave transformation theory to laterally heterogeneous structures. Atti Acad. Naz. Lincei, 5, 5-16

Panza, G. F. and Vaccari, F. (1994), Advanced criteria of seismic zoning and synthetic seismograms, Proc. Europrotech, Ed. G. Verri, CISM, Udine, 63-92.

Romanelli, F., and Panza., G.F., (1994). On the estimation of large earthquakes size. Atti Acad. Naz. Lincei, 5, 329-339.

Fäh, D. and Panza, G. F. (1994), Realistic modeling of observed seismic motion in complex sedimentary basins. Ann. Geofis., 37, 1771-1797.

Suhadolc, P., Marson, I. and Panza, G. F., (1994), Crust and upper mantle structural properties along the active Tyrrhenian rim. Mem. Descrittive Carta Geol. It., 49, 51-62.

Panza, G. and Suhadolc, P., (1994). When the earth moves. Physics World, 7(7), 19.

Vuan, A., Costa, G., Suhadolc, P. and Panza, G.F., (1994). In situ measurements of dynamic parameters of soils near accelerometric stations. XXIV General Assembly of European Seismological Commission, Athens, 47, 1579-1588.

Panza, G.F., (12-1994). Contributo alle voci di "SISMOLOGIA" e "SISMOMETRIA". Quarto volume della Quinta Appendice dell'Enciclopedia Italiana fondata da Giovanni Treccani, pp. 787-792

1995

Romanelli, F., and Panza, G.F., (1995). Effect of source depth correction on the estimation of earthquake size. Geophys. Res. Lett., 22, 1017-1019.

Marson, I., Panza, G.F. and Suhadolc, P., (1995). Crust and upper mantle models along the active Tyrrhenian rim. Terra Nova, 7, 348-357.

Vaccari, F., Nunziata, C., Fäh, D. and Panza, G. F., (1995). Reduction of seismic vulnerability of megacities: the cases of Rome and Naples. Proc. Fifth Int. Conf. Seismic Zonation, 1392-1399, AFPS-EERI, Ouest Editions Presses Académiques.

Costa, G, Panza, G.F. and Rotwain, I., (1995), Stability of premonitory seismicity pattern and intermediate-term earthquake prediction in Central Italy, Pure Appl. Geophys., 145, 259-275.

Novikova, O.V., Vorobieva, I.A., Enescu, D., Radulian, M., Kuznetzov, I. and Panza, G.F., (1995). Prediction of strong earthquakes in Vrancea, Romania, using the CN algorithm, Pageoph, 145, 277-296.

Nunziata, C., Fäh, D. and Panza, G.F., (1995). Mitigation of seismic hazard of a megacity: the case of Naples. Atti Convegno "Terremoti e Civiltà' abitative", Acad. Naz. Lincei, Ann. Geofis. 38, 649-661.

Suhadolc, P., Fäh, D., Vaccari, F. and Panza, G.F., (1995). Un contributo alla microzonazione di Roma. Atti Convegno "Terremoti in Italia", Accad. Naz. Lincei, 122, 203-210.

Vaccari, F., Costa, G., Suhadolc, P. and Panza, G.F., (1995). Zonazione sismica al prim'ordine per l'area italiana. Atti Convegno "Terremoti in Italia", Accad. Naz. Lincei, 122, 117-126.

Nunziata, C., Fäh, D., Luongo, G. and Panza, G.F. (1995). Microzonazione sismica di Napoli, Atti Convegno "Terremoti in Italia", Accad. Naz. Lincei, 122, 151-159.

Costa, G., Orozova-Stanishkova, I., Panza, G.F., and Rotwain, I., (1995). L'algoritmo CN: previsione a medio termine dei terremoti e conferma del modello sismotettonico d'Italia. Atti Convegno "Terremoti in Italia", Accad. Naz. Lincei, 122, 259-270.

Mammo, T., Vuan, A., Costa, G. and Panza, G.F., (1995). Imaging of the weathered zone and estimation of Q in sediments, B. G. T. A., 37, 179-189.

Fäh, D., Iodice, C., Suhadolc, P. and Panza, G.F., (1995). Application of numerical simulations for a tentative seismic microzonation of the city of Rome, Atti Convegno "Terremoti e Civiltà abitative", Acad. Naz. Lincei, Ann. Geofis., 38, 607-616.

Panza, G.F., (1995). Contributo alla voce di "SISMOLOGIA". Volume Quinto dell'Enciclopedia delle Scienze Fisiche, Istituto dell'Enciclopedia Italiana fondata da Giovanni Treccani (1995).

1996

Kebede, F., Vuan, A., Mammo, T., Costa, G. and Panza, G.F., (1996). Shear wave velocity structure of Northern and North-eastern Ethiopia, Acta Geodaetica et Geophysica, 31, 145-159.

Romanelli, F., Bing, Z., Vaccari, F. and Panza, G.F., (1996). Analytical computation of reflection and transmission coupling coefficients for Love waves. Geophys. J. Int., 125, 132-138.

Costa, G., Orozova-Stanishkova, I., Rotwain, I.M. and Panza, G.F., (1996). Seismotectonic Models and CN algorithm: the case of Italy. Pure Appl. Geophys., 147, 119-130.

Sileny, J., Campus, P. and Panza, G.F., (1996). Seismic moment tensor resolution by waveform inversion of few local noisy records - I. Synthetic tests. *G. J. Int.*, 126, 605-619.

Cespuglio, G., Campus, P. and Sileny, J., (1996). Seismic moment tensor resolution by waveform inversion of a few local noisy records - II. Application to the Phlegrean fields (southern Italy) volcanic tremors. *Geophys. J. Int.*, 1996, 126, 620-634.

Sileny, J., Campus, P. and Panza, G.F., (1996). Seismic source moment measurements from waveform inversion. *Proc. XV Congress of the Carpatho-Balcan Geological Association, Athens, 1995*, 57-62.

Radulian, M., Ardeleanu, L., Campus, P., Sileny, J. and Panza, G.F., (1996). Size determination of weak Vrancea (Romania) Earthquakes. *Proc. XV Congress of the Carpatho-Balcan Geological Association, Athens, 1995*, 63-68.

Campus, P., Suhadolc, P., Panza, G.F. and Sileny, J., (1996). Complete moment tensor retrieval for weak events: application to orogenic and volcanic areas. *Tectonophysics*, 261, 147-163.

Radulian, M., Ardeleanu, L., Campus, P., Sileny, J. and Panza, G.F., (1996). Waveform inversion of weak Vrancea (Romania) earthquakes. *Studia Geophysica et Geodaetica*, 40, 367-380.

Ardeleanu, L., Radulian, M., Kravanja, S., Dufumier, H. and Panza, G.F., (1996). Focal mechanism of earthquakes of Ramnicu Sarat (Romania) sequence of 21-22 February 1983, inferred from waveform inversion. In: *Seismology in Europe* (B. Thorkelsson ed.), Reykjavik, 300-305.

Costa, G., Fäh, D., Suhadolc, P., Paparelli, F., Smit, P., Mayer-Rosa, D., and Panza, G.F., (1996). The Friuli (Italy) accelerometric network: recording and estimation of strong-ground motion. In: *Seismology in Europe* (B. Thorkelsson ed.), Reykjavik, 392-398.

Panza, G.F., Vaccari, F., Costa, G., Suhadolc, P. and Fäh, D., (1996). Seismic input modeling for Zoning and microzoning. *Earthquake Spectra*, 12, 529-566.

Panza, G.F., Romanelli, F. and Yanovskaya, T.B., (1996). Synthetic tsunami motion in realistic oceanic media. In: *Seismology in Europe* (B. Thorkelsson ed.), Reykjavik, 655-660.