

Curriculum Vita

Ari Ben-Menahem

1928, Nov. 4	Born in Berlin, Germany
1954	M.Sc. in Physics and Mathematics, The Hebrew University, Jerusalem, Israel
1954-1958	Chief seismologist, Government of Israel, Jerusalem, Israel
1958-1959	Research Assistant, University of Uppsala, Sweden
1961	Ph.D. in Geophysics, California Institute of Technology, Pasadena, CA, USA
1963-1965	Senior Research Fellow, California Institute of Technology, Pasadena, CA, USA
1966-1994	Professor of Geophysics and Mathematical Physics, The Weizmann Institute of Science, Rehovot, Israel
1968-1990	Director, Aldopho Bloch Geophysical Observatory
1970-1994	The Sam and Ayala Zacks Chair of Geophysics, The Weizmann Institute of Science, Rehovot
1975-1977	Visiting Professor, Department of Geophysics, Stanford University, CA, USA
1979	Visiting Professor, Department of Geophysics, Stanford University, CA, USA
1983-4 1988-89 1993-94	Professor of Geophysics, Mass. Inst. of Technology, Staff Member Earth Resources Laboratory Visiting professor of geophysics, UCLA.
1987	Visiting professor, Univ. of Minnesota, USA
1988-89	National Research Council Fellow, U.S. Air Force, Hanscom AFB, MA.
1994	Visiting Professor, University of Paris, France
2000	Visiting Professor, Texas A&M University, TX, USA
2012–02–23	Invited speaker, SSA 2012.

Affiliations, Memberships and Special Assignments (1953-1994)

- Government of Israel – Chief Seismologist (1954-1958)
- Society of the Sigma-Xi (1960)
- American Geophysical Union (1961)
- Seismological Society of America (1961)
- International Union of Geodesy and Geophysics (1961)
- Editorial Board: *Mathematical Reviews* (1961-1966)
- New York Academy of Art and Sciences (1966)
- European Seismological Commission (1967)
- Board of Directors, Israel Institute of petroleum Research and Geophysics (1975-1985)
- Editorial Board: *Bolletino di Geofisica* (1979-1985)
- Government of Israel – chairman, Advisory Group on Earthquake Hazards (1980-1983)
- American Physical Society (1985)
- IASPEI Commission on Wave Propagation (1985-1992)
- Chairman and Organizer, 18th IUGG International conference on Mathematical Geophysics, Jerusalem, Israel (1990)

Ari Ben-Menahem

Authored over 140 research papers in the fields of seismology, geophysics, mathematical physics and applied mathematics.

Current Research Interests:

- *Geophysics*

Elastic, acoustic and electromagnetic wave propagation in complex-media simulation of the earth and its environment (anisotropic, inhomogeneous, proelastic, piezoelectric, micropolar, pre-stressed, elasto-plastic, viscoelastic, viscoplastic, nonlinear, damaged). Interaction of gravitational radiation with the earth.

- *Mathematical Physics*

Solutions of linear and nonlinear differential integral and integro-differential equations of mathematical physics, with special emphasis on radiation and diffusion processes. Wigner rotation.

- *Exploration Seismology*

Development of diagnostic tools for oil exploration through computer simulation of sources, receivers, and wave propagation in fluid-filled boreholes; treatment of body-, surface- and conical Mach-waves, and effects of structural complexities.

- *Nuclear Explosion Seismology*

Detection and identification of seismic signals from small clandestine underground nuclear explosions. To this end, I derived the multi-pole radiation field from non-spherical cavities in inhomogeneous anisotropic and fractured crustal models and compare the ensuing radiation patterns of body-waves and surface waves with those of earthquakes. This enables us to set definite differentiation criteria needed for identification.

- *Earthquake Seismology*

Short and long term dynamic and quasi-static processes on active earthquake faults and their manifestation through the ensuing regional seismicity: a model for nonlinear visco-poroelastic build-up of strain fields prior to propagating rupture in seismogenic zones. Long-range triggering of earthquakes and the correlation of stress diffusion in regions surrounding active fault systems with the occurrence of major earthquakes.

- *Earthquake prediction*

A unified mesoscale framework based upon statistical mechanics of cracks.