

Strait of Messina - Scylla & Charybdis



Figure 1. ERS-1 C-Band VV SAR image of the Strait of Messina collected on July 11, 1993 at 09:41 GMT (Orbit: 10387, Frames: 2835). Image dimensions are 65 km x 65 km centered at 38°16' N, 15°29' E. The image shows internal wave signatures propagating both north and south out of the strait. Northward propagating internal waves are less frequently observed than southward propagating ones. [ERS-1 image ©ESA 1993, from The Tropical and Subtropical Ocean Viewed by ERS SAR <http://www.ifm.uni-hamburg.de/ers-sar/>]



Figure 2. ERS-1 C-Band VV SAR image of the Strait of Messina collected on September 22, 1994 at 21:15 GMT (Orbit: 16672, Frames: 0747). Image dimensions are 100 km x 100 km centered at 37°38' N, 15°22' E. The image shows signatures of two prominent internal wave packets propagating south out of the strait with the signature of a smaller, less intense packet between them. [ERS-1 image ©ESA 1994, from The Tropical and Subtropical Ocean Viewed by ERS SAR <http://www.ifm.uni-hamburg.de/ers-sar/>]

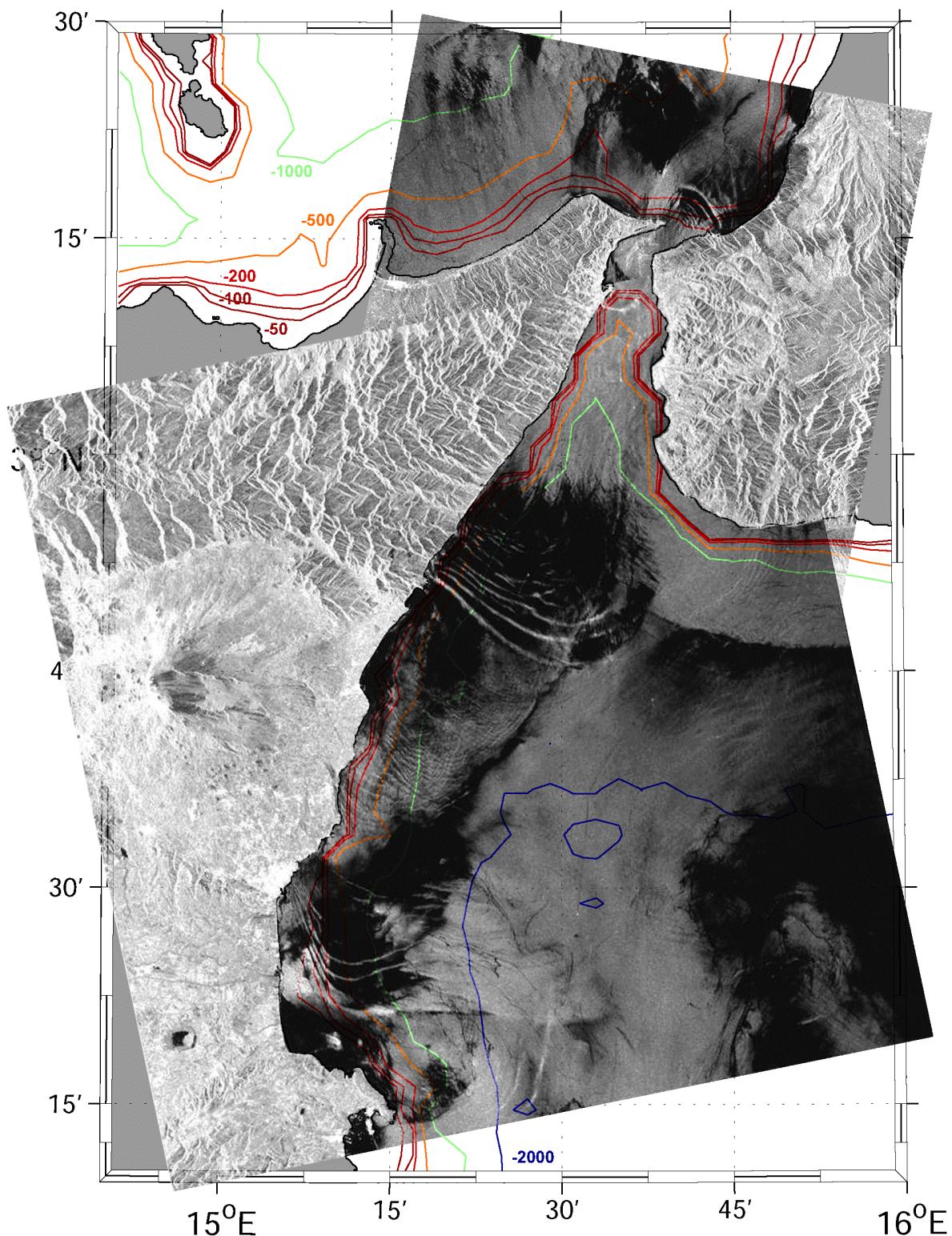


Figure 3. ERS-1 SAR images of the Strait of Messina shown with the local bathymetry. (Bathymetry derived from Smith and Sandwell version 8.2). The internal waves in the strait are generated by strong tidal flow over the shallow sill separating Italy from Sicily. [Original ERS images ©ESA 1993, 1994, from The Tropical and Subtropical Ocean Viewed by ERS SAR <http://www.ifm.uni-hamburg.de/ers-sar/>]

Related Publications

- Alpers, W., P. Brandt, A. Rubino, and J.O. Backhaus, 1996: Recent contributions of remote sensing to the study of internal waves in the Strait of Gibraltar and Messina. *Dynamics of Mediterranean Straits and Channels*. ed. by F. Briand, *CIESM Science Series*, **17 (2)**, 21-40
- Alpers, W., and E. Salusti, 1983: Scylla and Charybdis observed from space. *J. Geophys. Res.*, **88 (C3)**, 1800-1808.
- Androsov, A.A., N.Ye. Vol'tsinger, B.A. Kagan, and E. Salusti, 1994: Residual tidal circulation in the Strait of Messina. *Phys. Atmos. Ocean*, **29**, 522-531.
- Bignami, F., and E. Salusti, 1990: Tidal currents and transient phenomena in the Strait of Messina: A review. *The Physical Oceanography of Sea Straits*, ed. by L.J. Pratt, Kluwer Academic, 95-124.
- Brandt, P., A. Rubino, W. Alpers, and J.O. Backhaus, 1997: Internal waves in the Strait of Messina studied by a numerical model and synthetic aperture radar images from the ERS ? Satellites. *J. Phys. Oceanogr.*, **27 (5)**, 648-663.
- Brandt, P., A. Rubino, D. Quadfasel, W. Alpers, J. Sellschopp, and H.-V. Fiekas, 1999: Evidence for the influence of atlantic-ionian stream fluctuations on the tidally induced internal dynamics in the Strait of Messina. *J. Phys. Oceanogr.*, **29 (5)**, 1071-1080.
- Del Ricco, R., 1982: A numerical model of the vertical circulation of tidal strait and its application to the Messina Strait. *Nuovo Cimento Soc. Ital. Fis.*, **5C**, 21-45.
- Di Sarra, A., A. Pace, and E. Salusti, 1987: Long internal waves and columnar disturbances in the Strait of Messina. *J. Geophys. Res.*, **92**, 6495-6500.
- Griffa, A., S. Marullo, R. Santoleri, and A. Viola, 1986: Note on internal nonlinear tidal waves generated at the Strait of Messina. *Continental Shelf Research*, **6**, 677-687.
- Hopkins, T.S., E. Salusti, and D. Settimi, 1984: Tidal forcing of the water mass interface in the Strait of Messina. *J. Geophys. Res.*, **89**, 2013-2024.
- Marullo, S., and R. Santoleri, 1986: Fronts and internal currents at the northern mouth of the Strait of Messina. *Nuovo Cimento C.*, **9**, 701-714.
- Nicol?, L., and E. Salusti, 1991: Field and satellite observations of large amplitude internal tidal wave trains south of the Strait of Messina, Mediterranean Sea. *Ann. Geophys.*, **9**, 534-539.
- Sapia, A., and E. Salusti, 1987: Observation of nonlinear internal solitary wave trains at the northern and southern mouths of the Strait of Messina. *Deep-Sea Res.*, **34 (7A)**, 1081-1092.