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Prof Shamita Das

Professor of Earth Sciences

Research Theme
Tectonics, volcanoes and hazards

Research Area
Seismology

Research Profile

I am a seismologist and received my doctorate at MIT in 1976. My research in earthquake studies has been conducted in several broad areas of observational and theoretical seismology over the last three decades. The major goal of the work is to understand the physics of the earthquake preparation and faulting process, and to predict expected motion at sites of engineering interest (the built environment) due to large earthquakes. The long-term goal is to prepare the physical basis for developing the capability to predict earthquakes, in future, if possible. Current research is focussed on the scaling of small to large earthquakes, study of very large submarine earthquake which cannot be studied by any other means such as GPS or SAR, and study of deep earthquakes and shapes of deep seismic zones along with its implications for mantle dynamics.

Recently, I have been working on great earthquakes in Sumatra, Antarctica, and Indonesia. I have served on the UK Government's Natural Hazards Working Group, set up by Sir David King, Chief Scientific Advisor to the UK Government. I am a Fellow of the [American Geophysical Union](#).

Selected Publications ([Complete Publications](#)) ([CV](#))

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- Ammon, CJ, Ji, C, Thio, HK, Robinson, D, Ni, SD, Hjorleifsdottir, V, Kanamori, H, Lay, T, Das, S, Helmberger, D, Ichinose, G, Polet, J, Wald, D, (2005) 'Rupture process of the 2004 Sumatra-Andaman earthquake', *SCIENCE*. pp. 1133-1139 doi: [10.1126/science.1112260](https://doi.org/10.1126/science.1112260)
- Das, S, (2004) 'Seismicity gaps and the shape of the seismic zone in the Banda Sea region from relocated hypocenters', *JOURNAL OF GEOPHYSICAL RESEARCH-SOLID EARTH*. pp. 1-18 doi: [10.1029/2004JB003192](https://doi.org/10.1029/2004JB003192)
- Das, S, (2004) 'Dynamic fracture mechanics in study of the earthquake rupturing process: theory and observation (vol 51, pg 11, 2003)', *JOURNAL OF THE MECHANICS AND PHYSICS OF SOLIDS*. pp. 2185-2186 doi: [10.1016/j.jmps.2004.06.003](https://doi.org/10.1016/j.jmps.2004.06.003)
- Das, S, Henry, C, (2003) 'Spatial relation between main earthquake slip and its aftershock distribution', *REVIEWS OF GEOPHYSICS*. pp. doi: [10.1029/2003RG000119](https://doi.org/10.1029/2003RG000119)
- Henry, C, Das, S, (2002) 'The M-w 8.2, 17 February 1996 Biak, Indonesia, earthquake: Rupture history, aftershocks, and fault plane properties', *JOURNAL OF GEOPHYSICAL*



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- Robinson, DP, Henry, C, Das, S, Woodhouse, JH, (2001) 'Simultaneous rupture along two conjugate planes of the Wharton Basin earthquake.', *Science*. pp. 1145-1148 doi: [10.1126/science.1059395](https://doi.org/10.1126/science.1059395)
- Henry, C, Das, S, Woodhouse, JH, (2000) 'The great March 25, 1998, Antarctic Plate earthquake: Moment tensor and rupture history', *JOURNAL OF GEOPHYSICAL RESEARCH-SOLID EARTH*. pp. 16097-16118 doi: [10.1029/2000JB900077](https://doi.org/10.1029/2000JB900077)
- Das, S, Schoffel, HJ, Gilbert, F, (2000) 'Mechanism of slab thickening near 670 km under Indonesia', *GEOPHYSICAL RESEARCH LETTERS*. pp. 831-834 doi: [10.1029/1999GL010865](https://doi.org/10.1029/1999GL010865)
- Campus, P, Das, S, (2000) 'Comparison of the rupture and radiation characteristics of intermediate and deep earthquakes', *JOURNAL OF GEOPHYSICAL RESEARCH-SOLID EARTH*. pp. 6177-6189 doi: [10.1029/1999JB900384](https://doi.org/10.1029/1999JB900384)
- Schoffel, HJ, Das, S, (1999) 'Fine details of the Wadati-Benioff zone under Indonesia and its geodynamic implications', *JOURNAL OF GEOPHYSICAL RESEARCH-SOLID EARTH*. pp. 13101-13114 doi: [10.1029/1999JB900091](https://doi.org/10.1029/1999JB900091)
- Pegler, G, Das, S, (1998) 'An enhanced image of the Pamir Hindu Kush seismic zone from relocated earthquake hypocentres', *GEOPHYSICAL JOURNAL INTERNATIONAL*. pp. 573-595 doi: [10.1046/j.1365-246x.1998.00582.x](https://doi.org/10.1046/j.1365-246x.1998.00582.x)
- Pegler, G, Das, S, (1996) 'Analysis of the relationship between seismic moment and fault length for large crustal strike-slip earthquakes between 1977-92', *GEOPHYSICAL RESEARCH LETTERS*. pp. 905-908 doi: [10.1029/96GL00963](https://doi.org/10.1029/96GL00963)