

Geowissenschaftliches Kolloquium

Plates vs. Plumes: A geological controversy

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Two hypotheses for the origin of “anomalous” magmatism are the Plate- and Plume hypotheses. The Plume hypothesis envisages a thermal diapir that rises from the core-mantle boundary and actively penetrates a passive lithosphere. The Plate hypothesis envisages magmatism as a passive reaction to active lithospheric extension, which permits material to rise to the surface. Extension arises from processes associated with plate tectonics [<http://www.mantleplumes.org/>]. Hypothesis-testing requires matching predictions against observations. I will discuss how these theories match observations from “hot spots”.



Prof. Gillian R. Foulger received her Ph.D. from University of Durham whilst working at University of Iceland studying geothermal earthquakes. She subsequently worked in geothermal energy, measuring crustal deformation using GPS and imaging mantle structure using teleseismic tomography. She is currently working in human-induced earthquakes and the Plates vs. Plumes controversy, and voted “bleiben” in the recent referendum. She manages the website www.mantleplumes.org under the protection of Durham University, U.K..

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