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Multi-disciplinary contributions of HartRAO to global geodesy and geodynamics

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The Hartebeesthoek Radio Astronomy Observatory (South Africa) supports global initiatives in both geodesy and geodynamics through an active programme of science platform provision in Africa, the Atlantic Ocean, Indian Ocean and Antarctica. Our involvement ranges from the installation of tide gauges, Global Navigation Satellite Systems stations, seismometers and accelerometers on remote islands to the installation of radar reflectors in Antarctica which enable accurate, geo-referenced maps of the Antarctic coast line to be made. Currently we also participate in the African VLBI Network (AVN), with the aim to densify not only astronomical observatories in Africa, but to improve the geometry and distribution of advanced geodetic and geophysical equipment to facilitate development of research platforms in Africa, which can be used for geodynamics and related sciences, supporting international projects such as the WEGENER initiative. We present our multi-disciplinary activities during the last decade and sketch the way forward. Participation of Africa in the global arena of astronomy, geodesy, geodynamics and related fields will receive a major boost during the next decade. This is partially due to the development of a component of the Square Kilometre Array (SKA) in Africa but also due to the Global Geodetic Observing System (GGOS) project and the international objectives of higher geodetic accuracies and more stable reference frames. Consequent spinoffs into many disciplines relying on global reference frames and sub-cm positional accuracies stand to benefit and Africa can play a major role in improving both science and network geometries.