Abhishek Lakhote et al., Int J Earth Sci Geol. 2019
DOI: http://dx.doi.org/10.18689/2642-1569.a2.008

madridge CONFERENCES

4th International Earth Science, Geology, Oil and Gas Conference

December 02-03, 2019 | Kuala Lumpur, Malaysia

Tectono-Geomorphic Studies along Eastern Segment of South Wagad Fault Zone in Eastern Kachchh, Western India

Abhishek Lakhote*, Chirag Jani, Gaurav Chauhan, M. G. Thakkar and Subhash Bhandari
Krantiguru Shyamji Krishna Verma Kachchh University, India

The present study attempts to describe the Neotectonics/tectonogeomorphic studies in the Eastern segment of Wagad Uplift which is located in the eastern part of Kachchh Rift Basin (KRB). To delineate tectonic geomorphology in the study area to know the interplay between tectonic and surface processes that shapes the landscape of eastern Kachchh which falls in regions of active deformation. The South Wagad Fault (SWF) defines the southern margin of the Wagad uplift with a series of small domes and anticlines forming a low hill range, called the South Wagad Hills, The SWF zone is divisible into two main geomorphic domains: the South Wagad Hill Range to the north of SWF and the south sloping plain to the south of it. The Easternmost part of the South Wagad Fault also covers rugged topography which comprises Mesozoic to Neogene rocks and is practically uninvestigated as far as their geomorphic and neotectonic activity along the SWF is concerned. Whereas, in the western segment of SWF zone not much but little work has been done which incriminates the active nature of the SWF in western part of the southern margin of Wagad Uplift. The present study delineates neotectonic and geomorphic features along the eastern part of the SWF zone of the Wagad Uplift.

The present study deals with the eastern extremity of South Wagad Fault, the geomorphic expression of the fault in the eastern segment consisted of Gagodar, Kanmer, Gui and Mardak domes and anticlines respectively. They are exposed as a series of linear mounts projected amidst the Little Rann of Kachchh and surrounded by the alluvial sediments of eastern rivers as well as the rann sediments. In the westernmost part of the eastern extremity consist of Gagodar and Kanmer anticline which shows neotectonic features like transverse fault, upwarping surfaces, Contact between Mesozoic and Neogene rocks and fault controlled valley, etc. The camel back ridges are steep to the south and gentle to the north forming small cuesta ridges. In the easternmost extremity, Gui dome is separated laterally in en-echelon pattern, while the Mardak dome groups are mostly in linear fashion. The stream systems associated with the northern flanks are comparatively bigger while those associated with the southern flanks are short lived. Most of the drainages show dendritic pattern, however there are a few aligned drainages. The South Wagad Fault is not exposed anywhere along both of the domes but its geomorphic expression like fault scarps, reactivated strike slip transverse faults, gulley erosions can be observed. As we move further to the east, the magnitude of the geomorphic expressions of the fault are lesser and eventually cannot be traced any further.

Keywords: Tectono-Geomorphic, South Wagad Fault, Gui Dome, Stress Accumulation

Biography

Abhishek R. Lakhote is a research scholar in the Department of Earth & Environmental science in KSKV Kachchh University and he is registered as a PhD Scholar at K.S.K.V. Kachchh University "Active Fault Mapping and Paleoseismic investigation along South Wagad Fault Zone of Kachchh Basin: An approach to seismic hazard assessment in western continental margin of India". He worked in organization committee in XXX Gujarat Science Congress-2016 on “Challenges for Science and Technology Education during coming Decades: Preparing for a Sustainable Gujarat” on 6th and 7th February 2016 at KSKV Kachchh University, Bhuj.