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1 Fluvial geomorphology in the Boulonnais area (Northern France). imprint of recent differential vertical movements

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The Boulonnais area is located at eastern termination of English Weald in Nord-Pas-Calais region (France). This area has long been considered as an exhumed and eroded anticline fold. However, recent studies have demonstrated that this zone results from a tectonic inversion(see review in [1]), which has started in late Cretaceous and developed till Paleogene time.

In the study area, landforms are mainly influenced by competence variations of the rocks, which is highlighted by cuestas morphologies. In this sector, outcropping rocks are very diverse with Paleozoic marbles, carbonate and schists, Triassic sandstones, Jurassic carbonates, and cretaceous carbonates, chalk, and marl. Therefore, we guess that geomorphological characteristics of landscapes are strongly dependent on lithology. In order to test such relationships between lithology and morphogenesis, we have selected three major rivers and their drainage basins overlying different lithologies, using a GIS software. We have calculated different morphometric descriptors (Strahler ordering, slopes, local relief, drainage density, hypsometric curves) for each drainage basin using a 50 m resolution DEM in order to characterize both drainage network and catchment geomorphology.

Our results show that despite erodability contrasts, morphometric characteristics are very similar, showing that lithology do not play a major role in geomorphology in the study area. Therefore, we suggest that morphometric indices are mainly controlled

by differential vertical movements related to neotectonics or to recent glacio-eustatic cause.

[1] Mansy *et al*. (2003). Dynamics and inversion of the mesozoïc Basin of the Weald-Boulonnais area: role of basement reactivation. – Tectonophysics, **373**, p.161-179.