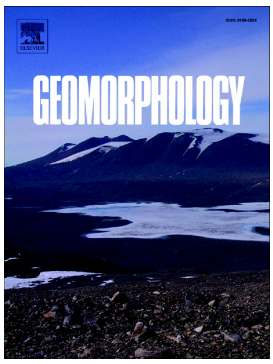

Morpho-textural implications to bedload flux and texture in the sand-gravel ephemeral Poveda Gully

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Morpho-textural implications to bedload flux and texture in the sand-gravel ephemeral Poveda Gully

Short title: The sand/gravel ratio: bedload flux and texture

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Abstract

We report on channel morpho-texture and bedload transport in a natural, steep, sand-gravel ephemeral channel draining the small Poveda Gully watershed in the mining area of the Alto Tajo Natural Park, Spain. First-ever continuous bedload flux and texture monitoring in a transitional sand-gravel environment was undertaken by two independent Reid-type slot samplers. Morphological changes in the feeder reach have been quantified by TLS (terrestrial laser scanning) and SfM (structure from motion) technologies. We identified a pattern in channel-bed morphology and texture (morpho-texture): when the channel is incised its texture is coarser, otherwise sand-filling occurs. These changes determine bedload flux and texture: sand fill brings rise to high fluxes and fine-