

**SOIL EROSION PROCESSES AND SEDIMENT FLUXES
IN A MEDITERRANEAN MARL LANDSCAPE,
CAMPIÑA DE CÁDIZ, SW SPAIN**

University of Technology Dresden, Germany

Mediterranean marl landscapes show evidence of significant soil erosion and landscape degradation in the past and present. Several authors point out the tendency to develop linear soil erosion features (rills and gullies) caused by concentrated overland flow.

Key words: soil erosion, marl landscapes, linear soil erosion.

Д. Фауст, М. Шмідт

Технічний університет Дрездена, Німеччина

**ПРОЦЕСИ ҐРУНТОВОЇ ЕРОЗІЇ ТА ПОТОКІВ ЧАСТОК ҐРУНТІВ НА СУГЛИНИСТИХ
ДІЛЯНКАХ СЕРЕДЗЕМНОМОР'Я, ПІВДЕННИЙ ЗАХІД ІСПАНІЇ**

Дослідження, які проводилися на суглинистих ділянках Середземномор'я, підтверджують високий рівень процесів ерозії розмивання ґрунтів, що не припиняють своєї дії з давніх часів. Деякі дослідники звертають увагу на тенденцію зростання рівня лінійної ерозії ґрунтів (пооява ярів) під впливом поверхневих стоків.

Ключові слова: ерозія ґрунту, суглинки, лінійна ерозія.

Д. Фауст, М. Шмидт

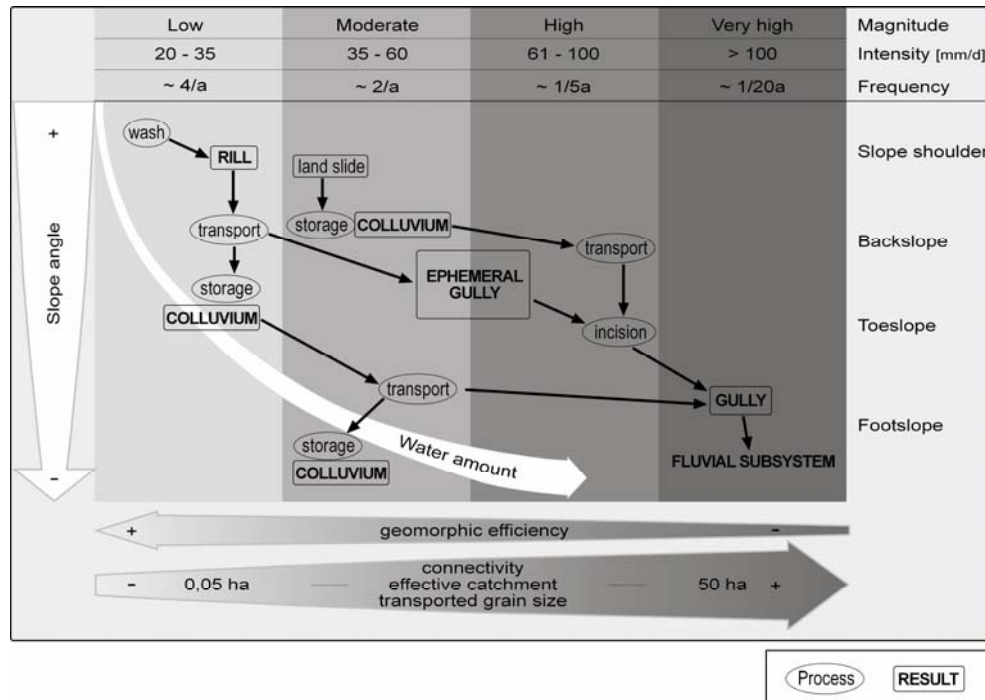
Технический университет Дрездена, Германия

**ПРОЦЕССЫ ПОЧВЕННОЙ ЭРОЗИИ И ПОТОКОВ ЧАСТИЦ ПОЧВ
НА СУГЛИНИСТЫХ УЧАСТКАХ СРЕДИЗЕМНОМОРЬЯ, ЮГО-ЗАПАД ИСПАНИИ**

Исследования, проводившиеся на суглинистых участках Средиземноморья, подтверждают высокий уровень процессов эрозии и размывания почв, не прекращающих свое действие с давних времен. Некоторые исследователи обращают внимание на тенденцию возрастания уровня линейной эрозии почв (появление ручьев и оврагов) под влиянием поверхностных стоков.

Ключевые слова: эрозия почвы, суглинки, линейная эрозия.

Under appropriate climatic conditions marl landscapes are counted among the world's most favourable regions for agricultural land use, offering good physical and chemical soil properties and high crop yield. These formations commonly form a typical landscape of rolling-hills with wide valley floors. Particularly, the Mediterranean marl landscapes of southern Europe have undergone a long history of land use resulted in huge soil erosion rates of up to 120 t/ha on 1000 m² field plots for single rainstorms of high intensity. Such rainfall events in average occur twice to three times per year (Faust, 1995). Especially Mediterranean marl landscapes show evidence of significant soil erosion and landscape degradation in the past and present (e.g. Thornes, 1985; Poesen and Hooke, 1997; Casali et al., 1999; Cerdà, 2002; Bracken and Kirkby, 2005). Several authors point out the tendency to develop linear soil erosion features (rills and gullies) caused by concentrated overland flow (Faust and Herkommer, 1995). Most likely, not only physical properties but also geochemical properties cause this affinity to develop linear soil erosion features (Imeson and Verstraten, 1988; Benito et al., 1993). In our case high sodium saturations of the Miocene marls are reported (Faust, 1995). These erosion features tend to serve as important transport paths and effective links for routing sediment between connected landscape elements (c.f. Poesen et al., 2003). Hence, high intra-slope connectivity and correspondingly high amounts of mass transfer (or flux) towards the valley floors can be expected.



Proposed conceptual model of the predominant geomorphic components and processes controlling the marl landscape of western Andalusia.

Arrows denote linkages between compartments and transport directions. Line thicknesses indicate intensity of processes

Based on field observations and soil sampling several landscape positions were explored and subsequently, a conceptual model of the predominant geomorphic components and processes controlling the studied system was developed.

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