地域の自然資源ならびにリスクのモデル化とその持続的管理のための
統合的手法の開発（富士山，日本）
Integrated Methods for Modeling and Sustainable Management of
Regional Natural Resources and Hazards (Mt. Fuji, Japan)

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The project goal was to explore the existing erosion and deposition patterns along the trails to the peak of Mt Fuji and explore available weather/climate data sets to potentially simulate the pattern along selected hillslopes and trails. The results could potentially be used to communicate and explore alternative Best Management Practices (BMPs) to maintain the trails and surrounding hillslopes through integrated methods of modeling and sustainable management of regional natural resources and hazards. This initial project was intended to explore the situation on-site and discuss in the near the future possibilities for collaborations to Figure 1: Micro earth pyramids erosion pattern near the begin of the Yoshida Trails, Mt Fuji (Aug 11 2018) apply a process-based soil erosion model (WEPP/GeoWEPP).
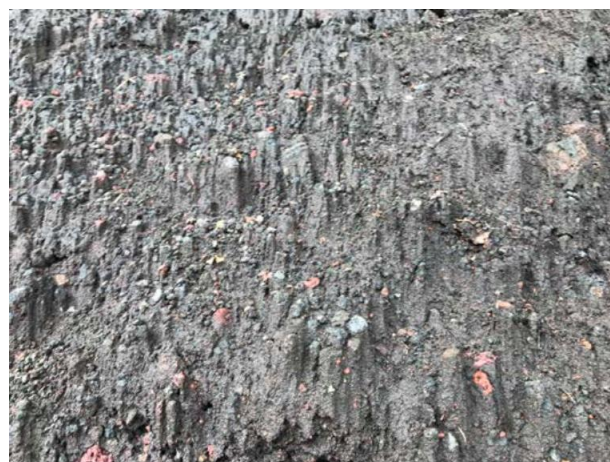

Figure 1: Micro earth pyramids erosion pattern near the begin of the Yoshida Trails, Mt Fuji (Aug 11 2018).

Figure 2: Erosion (left) and deposition pattern (right) observed along the heavily used downward trail near the Shita-Edoya (branch point) of Yoshida Subashiri Trails, Mt Fuji (after Thunderstorm passing and steady rain fall on Aug 12 2018).

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The photos illustrate some teachable moments of Earth Systems and Soil Erosion at the small scale (1 m^2 plot in figure 1) and larger hillslope scale (> 20 meter hillslope in figure 2) along a transect from the starting point of the most popular trails to the summit (e.g. for undergraduate students in introductory courses to Earth Systems Science and Soils Sciences). The visit of the MFRS enabled to explore these erosion and sedimentation pattern along this transect and to discuss potential on-site measuring and modeling experiments in the future. The measurements and modeling data can then be used to communicate effectively teachable moments about changes of Earth Systems as well as soil surface conditions and processes along this transect (e.g. changes in elevation/weather/climate/vegetation/soil properties) and responses to rainstorms throughout the seasons or multiple years.