



Landlab: a new, open-source, modular, Python-based tool for modelling Earth surface dynamics

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The ability to model surface processes and to couple them to both subsurface and atmospheric regimes has proven an invaluable tool in the Earth and planetary sciences. However, creation of a new model typically demands a very large investment of time, and modification of an existing model to address a new problem typically means the new work is constrained to its detriment by model adaptations for a different problem. Landlab is a new software framework explicitly designed to accelerate the development of new process models by providing: 1. a set of tools and existing grid structures to make development of new process components faster and easier; 2. a suite of stable, modular, and interoperable process components onto which new components can be added; and 3. a set of example models built with these components. Landlab's structure makes it ideal not only for fully developed modelling applications, but also for model prototyping and classroom use. Here we illustrate some of Landlab's capabilities, emphasizing its breadth of application and ease of use.