Transient valley width

Steady-state valley width

(a) Alluviation model

Sediment deposition and erosion by river

(b) Eternal-widening model

Lateral wall erosion by river

(c) Lateral-flux steady-state model

Balance between hillslope-sediment supply and sediment removal by river

(q_H, q_L)

(d) Poisson model (deterministic)

Switches in river direction follow Poisson process; uplift

(u)

(e) Poisson model (stochastic)

Switches in river direction follow Poisson process with drift