**Table S3**. Effect of basin geometry on sediment-accumulation rate, under constant sediment flux.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Initial basin width | Slope of basin sides | Sediment accumulation from 0-1Myr | Sediment accumulation from 1-2Myr | % change in vertical sediment-accumulation rate |
| Basin geometry: isosceles trapezoidal prism |
| 1 km | 1° | 50 m | 24 m | -52.3% |
|  | 5° | 50 m | 31 m | -37.2% |
|  | 15° | 50 m | 39 m | -21.9% |
|  | 30° | 50 m | 44 m | -13% |
|  |  |  |  |  |
| 5 km | 1° | 50 m | 31 m | -37.2% |
|  | 5° | 50 m | 42 m | -15.9% |
|  | 15° | 50 m | 47 m | -6.5% |
|  | 30° | 50 m | 48 m | -3.2% |
|  |  |  |  |  |
| 10 km | 1° | 50 m | 36 m | -27.7% |
|  | 5° | 50 m | 45 m | -9.3% |
|  | 15° | 50 m | 48 m | -3.5% |
|  | 30° | 50 m | 49 m | -1.7% |
|  |  |  |  |  |
| 10 km | 1° | 100 m | 63 m | -37.2% |
|  | 5° | 100 m | 84 m | -15.9% |
|  | 15° | 100 m | 93 m | -6.5% |
|  | 30° | 100 m | 97 m | -3.2% |
|  |  |  |  |  |
| Basin geometry: Conical frustrum |
| 1 km | 1° | 50 m | 15 m | -69.6% |
|  | 5° | 50 m | 22 m | -55.3% |
|  | 15° | 50 m | 32 m | -36.4% |
|  | 30° | 50 m | 38 m | -23.1% |
|  |  |  |  |  |
| 5 km | 1° | 50 m | 22 m | -55.4% |
|  | 5° | 50 m | 36 m | -27.6% |
|  | 15° | 50 m | 44 m | -12.2% |
|  | 30° | 50 m | 47 m | -6.3% |
|  |  |  |  |  |
| 10 km | 1° | 50 m | 28 m | -44.1% |
|  | 5° | 50 m | 41 m | -17.1% |
|  | 15° | 50 m | 47 m | -6.7% |
|  | 30° | 50 m | 48 m | -3.3% |