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漸化式モデルを用いた階段状岩石海岸地形の側方侵食速度の算出
A recursion model for calculating the original widths of narrow terraces and their lateral erosion rates on rock coasts.

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This presentation presents a new and simple recursion model for calculating the erosion rates of flights of narrow terraces under conditions of regular uplift. The general equations developed are: $\Delta xn = \Delta x'n + \Delta xn\text{-}1 - \Delta zn\text{-}1/\tan\theta$, and $\varepsilon n = \Delta xn/tn - tn+1$, where n is the number of narrow terraces, Δxn is the original width of narrow terrace n, $\Delta x'n$ is the observed width of narrow terrace n, $\Delta xn\text{-}1$ is the original width of narrow terrace n-1 (one step below terrace n), Δz is the height of the narrow terrace, θ is the gradient of the slope, ε is the lateral erosion rate, and t is the time uplifted. The model can be used to calculate the lateral erosion rate if the widths of the present shore platform and of the emerged narrow terraces can be obtained, and where chronological control is available. Lateral erosion rates on the Ashizuri, Boso, and Kii peninsulas in Japan, as well as the Huon Peninsula in Papua New Guinea, were calculated using the model to be approximately 0.001, 0.2-1.0, 0.009, and 0.002-0.014 m/yr, respectively. These calculated values are in agreement with the rates of lateral erosion determined in previous studies.

キーワード: 岩石海岸, 漸化式モデル, 側方侵食速度
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