

Correction to “Tectonic synthesis of the Olympic Mountains segment of the Cascadia wedge, using two-dimensional thermal and kinematic modeling of thermochronological ages”

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INDEX TERMS: 1035 Geochemistry: Geochronology; 3210 Mathematical Geophysics: Modeling; 8102 Tectonophysics: Continental contractional orogenic belts; 9350 Information Related to Geographic Region: North America; 9900 Corrections

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[1] In the paper “Tectonic synthesis of the Olympic Mountains segment of the Cascadia wedge, using two-dimensional thermal and kinematic modeling of thermochronological ages” by Geoffrey E. Batt, Mark T. Brandon, Kenneth A. Farley, and Mary Roden-Tice (*Journal of Geophysical Research*, 106(B11), 26,731–26,746, 2001), there were errors in two of the equations. The errors were entirely topographical and in no way affect the calculations, analysis, and conclusions of our paper.

[2] The corrections are as follows: Horizontal velocity is determined by maintenance of a flux balance,

$$u(x, z) = u(x, 0) = \frac{\alpha}{h(x)} \int_x^w \dot{\epsilon}(x) dx, \quad (4)$$

where $h(x)$ is the thickness of the wedge at a distance x from the deformation front. The vertical velocity w can then be obtained from the continuity equation $\partial u / \partial x + \partial w / \partial z = 0$. Using equation (4), we get

$$w(x, z) = \dot{\epsilon}(x) + \frac{\alpha z}{x \tan(\theta)} \left[\dot{\epsilon}(x) + \frac{1}{x} \int_x^w \dot{\epsilon}(x) dx \right], \quad (5)$$

where $h(x) = x \tan(\theta)$. The flux steady state condition specifies that vertical velocity at the surface $w(x, 0)$ is equal to the erosion rate $\dot{\epsilon}(x)$.