

## Up-warping of mantle transition zone caused by subducting and rotating slab: A simple analysis

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The volcanic region of the Somuncra plateau, northern Patagonia, is located far from the volcanic front. Recently, Orihashi et al. (2005) proposed a hypothesis that the volcanisms occurred in the Somuncura plateau were triggered by the water expelled from the upward movement of the transition zone, which may contain more water than the other region does. We constrain the mechanical aspect of their hypothesis based on a simple model of the deformation of the mantle wedge caused by the subducting and rotating slab using the corner flow model. Assuming that the water concentrates under the continental area, we find that above scenario may be possible, if the speed of subducting slab is less than around 2 cm/yr or the dip angle changes significantly (around 50 degrees within around 8 Myrs).