Slab dehydration and earthquakes: Double zones and mantle/crust events

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The intermediate-depth earthquakes occurring in the subducting oceanic lithosphere beneath the Japanese islands show a variety of modes of occurrence. We try to explain this variety in terms of the dehydration of metamorphic minerals in the slab on the basis of the assumption that these events occur by dehydration embrittlement (Raleigh and Paterson, 1965) either in the crust or in the mantle. The double seismic zone beneath Kanto, and the deep slab seismicity beneath Kii Peninsula and Kyushu are discussed in particular.

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