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Slab Roll back, back-arc extension and exhumation of HP rocks in the eastern-Central Mediterranean

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In the Mediterranean realm, rocks metamorphosed under high-pressure and ultra high-pressure conditions in subduction zones come back to the surface relatively soon after their burial and at rates comparable to plate boundary velocities. Their occurrence in several belts related to a single subduction event shows that the burial-exhumation cycle is a recurrent transient process. Using plate tectonic reconstruction, geological informations, tomographic images and laboratory experiments, we show that in the Calabria-Apennine and in the Aegean belts the exhumation of HP rocks is associated in time and space with subduction of small continental lithosphere blocks, that triggers slab rollback, creating the necessary space for the exhumation of the buoyant continental crust that was deeply buried just before.