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Control from upper plate absolute motion on slab dip and upper plate strain

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Statistical analysis of modern oceanic subduction zones parameters, such as the age and dip of downgoing plate, the tectonic regime of the upper plate or the absolute plate motions, is performed in order to investigate what are the controlling parameters for slab dynamics or upper plate strain. For that purpose, parameters describing 159 transects among all subduction zones that are not perturbed by nearby collision or ridge/plateau/seamount subduction, have been collected from global databases. Among the various correlations (slab dip vs upper plate strain for example) or noncorrelations (slab age vs slab dip), we notice that upper plate absolute motion both correlates with slab dip and upper plate strain. This observation deserves the question of the interaction between lithosphere and asthenosphere in subduction zones.