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Reconciling the geometry of the 2016 Central Italy seismogenic sources with the tectonic setting of the Apennines

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The Apennines is a fold-and-thrust belt derived by the positive inversion of a Mesozoic passive margin that is currently undergoing extension along its central axis, as testified by the 2016-2017 Central Italy earthquake sequence. The tectonic setting and structural style of the Apennines has been the object of a long debate, and several investigators proposed widely different models. End-members models include "thin-skinned" and "thick-skinned" structural interpretations.

In this contribution we introduce the geometry of the seismogenic sources of the 2016 Central Italy earthquake sequence derived from geodetic analyses (InSAR, GPS) into a number of geological sections crossing the epicentral area. The deeper portions of these geological sections are modelled using different tectonic styles: from a thin-skinned to thick-skinned dominated model. This exercise allowed us to discuss the implications of the 2016 Central Italy earthquake sequence in the understanding of the Apennines seismotectonic setting.