

Solid Earth Discuss., referee comment RC1  
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## Comment on se-2021-19

Dario Zampieri (Referee)

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Referee comment on "Neogene kinematics of the Giudicarie Belt and eastern Southern Alpine orogenic front (northern Italy)" by Vincent F. Verwater et al., Solid Earth Discuss., <https://doi.org/10.5194/se-2021-19-RC1>, 2021

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The manuscript presents tectonic balancing of a network of seven cross sections parallel to the local shortening direction through the Giudicarie Belt, which is the boundary between eastern and central-western Southern Alps. In the area, several amounts of Neogene shortening have been proposed by different authors, but the use of forward modelling performed using 3-D MOVE software and different kinematic scenarios provides new robust insights to the problem.

The manuscript is generally consistent and well-written, while the conclusions aren't fully justified by data. Within the work the section 3 is a bit weak. The main issues of the manuscript to be clarified are the Oligocene shortening direction, the decomposition of the shortening vector and the lack of the Thiene-Bassano fault (ITIS127 in DISS 3.2). In fact, several minor uncertainties are mainly related to the figures.

Please also note the supplement to this comment:

<https://se.copernicus.org/preprints/se-2021-19/se-2021-19-RC1-supplement.pdf>