

Interactive comment on “The Piuquencillo Fault System: a long-lived, Andean-transverse fault system and its relationship with magmatic and hydrothermal activity” by Jose Piquer et al.

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Dear anonymous referee, First of all, we would like to thank you very much for your valuable inputs to our manuscript. They will help us a lot to improve its quality. Regarding the main points highlighted in your letter: - About the text organization: 1) and 2) We will enhance the Introduction and the Geological Background sections, including all the topics mentioned in your letter 3) We will follow your suggestion of presenting the U-Pb geochronology results as a separate sub-section, within the Results chapter - About data presentation and interpretation: 1) Regarding the first point (low pitch angle, mentioned in line 165), we will cite Fig. 10, which shows the pitch angle of the slickenlines

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for all the measured fault planes. Regarding the preferred orientation of faults with different kinematics, we will add a new figure showing the strike of faults with a sinistral and dextral component, as suggested 2) Regarding the “conjugate” character of ENE- and NW-striking faults, we will add a clearer explanation of this topic. As explained in the text, we think both sets of faults are part of large-scale, pre-existing fault systems (the PFS and the Yeso Valley faults). These fault systems acted broadly as conjugate faults under the prevailing Miocene stress tensor, but they were not originated as such; because of this, they are not oriented at the ideal angle with respect to σ_1 expected if they were newly-generated faults in intact rocks. In particular, the ENE-striking faults are more parallel to σ_1 than the NW-striking ones. 3) Regarding the first question, yes, hydrothermal veins are syn-tectonic. We will specifically include a mention of this when describing the San Pedro de Nolasco veins, and will include in Fig. 4 field photographs of the main veins, to illustrate its syn-tectonic character. Regarding the age of dikes, we will include a more detailed discussion about the timing of their emplacement, and why we can assign them a middle to late Miocene age. However, this can only be done based on cross-cutting relationships and correlations; there are no radiometric ages of the dikes emplaced along the PFS. We only have U-Pb ages of major plutons, and there are previously-published K-Ar and U-Pb ages of volcanic rocks. We attempted to obtain U-Pb zircon ages from the dike swarms, however no zircons were found in any of the collected samples. Regarding the second question, yes, it is possible that there were several generations of dikes emplaced along the PFS, within the middle to late Miocene timeframe. We will also explicitly mention this in the text. We will also look carefully at all the minor comments mentioned in the supplement, and we will correct our manuscript accordingly. Kind Regards and thank you again for your careful review

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