Dear editor,

Thanks for your comments, we were happy to include your suggestions to refine the paper. The revised version mostly updated the discussion section, in addition minor revision on the text structure are included (more details below). We hope to have fully addressed your concerns and we are open to any further comment.

Kind regards

The authors

Public justification (visible to the public if the article is accepted and published):
The authors have adequately answered the reviewers' diverse, specific questions and the resulting revised manuscript is much improved. However, I feel some of the reviewers' underlying broader concerns have not yet been fully addressed. The present manuscript describes an excellent case study of exploring a neotectonic setting with archaeological overtones, but it provides few, clear 'lessons learned' or geological insights that might apply to similar studies elsewhere in Greece or worldwide. I therefore request the authors to add paragraphs to the Discussion to address this need:

1. Geologically, landslides associated with faults are very common in neotectonic environments, but their timing can be related to triggers such as distant earthquakes, local normal faulting or thrust faulting. Do spatial relationships inferred via the seismic sections help with this relative timing question? More specific reference to the broader, regional subduction to collision transition would help also (e.g., focal mechanisms)—-see refs such as Jackson 1994, 2010 for example.

Jackson, James. "Active tectonics of the Aegean region." Annual Review Of Earth And Planetary Sciences, Volume 22, pp. 239-271. 22 (1994): 239-271.

Shaw, Beth, and James Jackson. "Earthquake mechanisms and active tectonics of the Hellenic subduction zone." Geophysical Journal International 181.2 (2010): 966-984.

Thanks for the comment, more details regrading the topic are added in the discussion.

2. Seismic lessons learned. Where confronted with less than satisfactory results, the authors typically vaguely cite a challenging setting. The beginning of the Discussion is representative: "The interpretation of the seismic results is not straightforward due to the variable quality of the data along different profiles, resulting also from the complex geology of the site and the logistical challenges in the data acquisition". This does not enlighten readers sufficiently, encourage then to adopt these field methods in their own (environmental, hazard, archaeological) research, and reads as excuses. Manmade obstacles and rugged topography are common, the question is how best to mitigate their degrading effects on seismic sections, given the many tradeoffs. In the conclusions, bigger sources and longer arrays are recommended. Does this include using small explosive shots, stacking many vibrator truck sweeps, or regional earthquakes (so-called passive surveys)? Is it only longer arrays or also denser arrays perhaps deployed as grids? Why is there so much variability in data quality among your profiles? How much concern is coupling with local geology/soil, especially if P-S conversions are wanted? I do not expect you to answer all these specific questions, but wanted to give some indication of the potential scope of the needed text.

Thanks for the suggestion, we agree that this information were vague in the text and we expanded the discussion to include the main challenges faced during this survey and suggested solutions for future similar studies.

Additional private note (visible to authors and reviewers only):
Word choice and grammar would benefit from some attention throughout. Here is an edited abstract as an example of a more precise, less judgmental writing style:
Kefalonia island on the west coast of Greece, lies in a tectonic setting transitional from oceanic subduction to continental collision. This tectonic setting makes the island a testbed for hazard, seismic, and archaeological studies. To improve near-surface (top 100s of meters) knowledge in the , we acquired three seismic profiles in the Thinia valley on the isthmus connecting the main part of the island to the Paliki peninsula. A total of 3.5 km of seismic profiling used 5 m receiver and shot spacing and a 25 kg accelerated weight-drop source. Steep topography made survey design challenging, limited spread aperature, precluded uniform shot points, and resulted in crooked profiles. The acquired data show reflections down to 0.5 s and occasionally to 1 s. First-

break travel time tomography and 3D reflection traveltime modelling complemented the seismic reflection sections together with lithological columns from three boreholes located on the profiles. Results show a low-velocity zone with no reflectivity from the surface to approximately 100 m depth, probably related to the presence of unconsolidated (landslide?) material, underlain by two east-dipping reflections. In the context of previously published mapped geology and its inferred tectonic history, we interpret these reflectors as the same lithological boundary displaced by three steeply east-dipping thrust/reverse faults, probably components of the Hellenide thrust zone. These findings further constrain the contentious presence of a historic water channel in the Thinia valley.

Thanks for the suggestion, the text has been revised for a more precise and less judgmental style.