

R2: lines refer to the original manuscript	Authors: Lines refer to the updated version of the manuscript
Title	
Perhaps simplify the title to: "Historical tectonic activity along the Bassano-Valdobbiadene Thrust (eastern Southern Alps, Italy)" no seismic hazard assessment is done in this paper	We modified the title: "Paleoseismological evidence constraining the Historical tectonic activity of the eastern segment of the Bassano-Valdobbiadene Thrust (eastern Southern Alps, NE Italy)"
Abstract please try to use fewer place names in the abstract, it's a bit complicated to read with the large number of geographic terms	We have simplified the Abstract by removing the names of minor localities and retaining only those considered necessary.
Line 21: linear morphogenic, replace with surface-rupturing	Done.
Introduction	
Line 28 "the assessment of the seismic hazard in a region". This is absolutely not wrong, but your paper is not about seismic hazard in the first place. You do not discuss the implications of your results for the regional seismic hazard anywhere. So perhaps start the introduction differently in order to not lead the reader to false expectations.	We modified the text as follows "The seismotectonic characterization of low deformation rates regions, such as the eastern Southern Alps...."
Fig.1 Add localities INSET: I think that all the text in this inset map is too small to be legible, and that without further details or annotations, it doesn't tell a lot about the regional tectonics. Perhaps show general morphology with some simplified motion arrows and plate convergence rates. Or morphology plus Adria-Europe plate boundary. Or Enrico Serpelloni's rate maps. - please add info on coordinate system/EPSSG in the caption; I guess it's some UTM zone 32N or 33N? -Please add a legend for the size of the stars (mag of the earthquakes), or add mag in the labels -1268 event is discussed in the text but not plotted here	We updated Fig. 1 following the comments: We added the localities and the mountains cited in the paragraph. We have modified the figure inset by replacing it with a figure from Devoti et al. (2011). Done Done We also inserted in this Figure the earthquakes cited in the text from Guidoboni et al. (2019). The different symbol used for these events is indicated in the legend of the updated Figure1.
Line 58. In this paper This entire section is very similar to the abstract. I would try to avoid that.	We modified this part of the text as follows (lines 55-62): "In this paper, we investigate the recent activity of the Valdobbiadene–Vittorio Veneto segment (hereafter VVV), which represents the eastern sector of the Bassano–Valdobbiadene Thrust Auct. (Castellarin, 1981; Antonelli et al., 1990) and

	extends along the foothills between Miane and Cison di Valmarino localities (Fig. 2). In this area, Earthquake Catalogues (Locati et al., 2022; Rovida et al., 2021; Guidoboni 2018, 2019) do not report any strong seismic event during the last millennium. Morphotectonic and geophysical investigations carried out within the Seismic Microzonation Project (Gruppo di Lavoro MS, 2008) identified features possibly associated with the surficial trace of the VVV segment. Based on the preliminary results, the paleoseismological investigation conducted across the inferred surficial trace of VVV allowed us to constrain its Holocene/historical tectonic activity, and to evaluate its capability (sensu Gruppo di Lavoro MS, 2008; Linee Guida MS, 2015)".
Line 63 Ins. ref to Fig.2 when citing Miane e Cison di Valmarino	We modified the text avoiding minor localities.
Line 67. Linear What does linear mean in this context?	We replaced with "surface rupturing earthquakes"
Seismotectonic setting	
Line 72 Pliocene-Quaternary front: not sure what this refers to - to the rocks? to the activity? Later in the same sentence we learn that the fold-and-thrust-belt was active since middle Miocene...?	Our intention was to refer to the youngest (Pliocene–Quaternary) frontal sector of the polyphase Southern Alps fold-and-thrust belt, whose tectonic evolution began in the middle Miocene. We have revised the sentence to clarify this distinction (lines 76-77): "The study area belongs to the Pliocene–Quaternary tectonic front of the eastern Southern Alps, which represents the youngest frontal sector of a polyphase S–SE–verging, WSW–ENE striking fold and thrust belt active since middle Miocene (Fig. 1)"
Line 87 Silent. In the sense that they probably creep or slip aseismically, or in the sense that we simply didn't observe an earthquake because their average recurrence interval is thousands of years?	Our use of the term "silent" was intended to indicate the lack of documented strong historical earthquakes, not aseismic slip or creep. We have replaced the term silent with a clearer expression specifying that these sources have no record of strong historical earthquakes during the historical period (lines 84-86): "Conversely, the same data indicate that some of the main potential seismogenetic sources of the ESA front (DISS Working Group, 2025) did not have strong earthquakes and therefore appear inactive in the available historical record."
Lines 89-90: the Schio–Vicenza Fault–System (Zampieri et al., 2021) and the Arba–Ragogna Thrust–System (Galadini et al., 2005; Zanferrari et al., 2008; Poli et al., 2009; Poli et al., 2024). but the same is true for the BV1, the AC, the MT-CN, and the PZ (at least) according to Fig. 1 - cite Poli as (...; Poli et al., 2009, 2024)	The seismicity associated with the other tectonic structures is discussed later in the manuscript. In particular, the seismicity of the AC and MT-CN systems is discussed in the context of the studies that have attributed earthquakes with $M > 5$ to these structures (lines 116–124). For BV1, we state that no earthquakes have been associated with this structure (lines 88-89). We didn't mention PZ because it is far from the study area, but the deep ramp of PZ is associated with the September 1976 earthquake (Galadini et al., 2005).

Line 122. Earthquakes from Guidoboni Missing on the map because they are <M5.5 (1268 and 1859) or older than 1000 years (778). Since you discuss them here, perhaps add them anyway to Fig. 1?	We included the earthquakes from Guidoboni cited in the manuscript in Fig. 1 with a different symbol (green stars), as indicated in the legend.
Method	
Lines 168-172 I think this can probably be deleted, because it's general description only	ok
Lines 173-175: inverted to obtain 2D resistivity sections Which software did you use?	The software used is ZondRes2D as indicated in line 172.
Fig. 2 Modificare Unit in units Correggere heRmipelagic Caption: Regarding the citation, you cite sheet 22, but not 38, 37, 23. Please use a consistent citation style if possible.	Done Done We cited sheets 38, 37 and 23 with the same style of Sheet 22, but they belong to different cartographies. Sheets 38, 37 and 23 belong to the Carta Geologica delle Tre Venezie, while Sheet 22 belong to the Carta Geologica d'Italia. To help the reader, we modified the reference in the caption.
4 Quaternary evolution of the study area	
Lines 212-213 rephrase	We rephrased as follows: "The lack of vegetation cover on the slopes, together with intense surface runoff, favoured the mobilisation of large amounts of landslide material and debris into the valleys. A remarkable example is the colossal Fadalto landslide, which occurred approximately 15 ka ago (Pellegrini and Surian, 1996)."
4.1 Morphotectonic hints of recent tectonic activity of the Valdobbiadene-Vittorio Veneto Thrust	
Fig. 3 At 100% zoom level it's very hard to differentiate the symbols; can you make the ticks larger? In the legend Landslide maiuscolo	We updated Fig.3 making the symbols larger.
Fig. 4 and all detail maps Add Ohm*m in the ERT color bar Check captions	All detail maps (Figs. 4, 8, 11 and 17) were updated adding the Ohm*m in the ERT colorscale.
Line 243: suggesting a Holocene tilting it sounds like the tilt implies a Holocene age, but it's the position of the gravels (and the fact that they are unconsolidated?)	As this is a Holocene distal alluvial-fan deposit incised into the LGM terrace, the interpretation in terms of depositional bars is difficult to support. It is more reasonable to interpret the upstream dip of the gravels as being related to tectonic tilting. We agree that the term "innermost" may be misleading and could be replaced with "distal." We have therefore modified the sentence as follows (lines 247-248): "In the distal portion of the Holocene alluvial fan, incised within the LGM fan, gravels are..."

Fig. 5 please add a second panel below in which the image is 50% transparent and you draw the interpretation on it	We modified Fig.5 adding a light interpretation on the original photo.
5.1 Cison 1 trench (Case dalla Libera locality)	
Line 260: Unit F What about units G and H?	We added this sentence (lines 267-268): “In the southernmost portion of the wall, an alluvial fan deposit composed of gravel with cobbles in a sandy-silty matrix overlies unit F. Unit G, the uppermost unit, consists of ploughed soil.”
Lines 269-270 Reimer et al 2013 e 2020 Why using two different calibration curves?	The samples were recalibrated using the online version of OxCal and the IntCal20 calibration curve to ensure consistency across the dataset. We have therefore added a section to the Methods describing the calibration procedure in detail (lines 178-181): “IntCal13 or IntCal20 atmospheric calibration curves (Reimer et al., 2013, 2020). To ensure consistency across the dataset, radiocarbon ages originally calibrated by Beta Analytic using IntCal13 were recalibrated based on the original conventional radiocarbon ages using IntCal20 in the online version of OxCal v4.4 (Bronk Ramsey, 2021)”. Tables and captions were updated accordingly.
5.2 Follina 1 Trench (alla Sega locality)	
Fig. 8 In legend Morpho Add Ohmm Caption	done
Fig. 9 Samples in the log are missing	The updated Fig.9 includes samples, bricks and plastic.
Line 304 to 1666-1783 cal CE for the shallowest deposits But Unit H contains plastic, so it must be 17th century to modern. What about Unit G?	We extended the age interval referred to unit H (17 th and 21 st centuries) and we added a sentence to explain our interpretation (lines 319-323): “...the subsequent anthropogenic infill deposited between the 17 th and 21 st centuries. Since no medium-to-strong earthquakes have been reported in the Italian seismic catalogues for the study area since the 17 th century, it is reasonable to infer that the identified event occurred shortly after the 17 th century. This vertical displacement can be related to a coseismic event”. We have moved the description of Unit G to the earlier section of the text where the other units are described (line298).
Line 310: middle-angle Please provide precise numbers or a range of dips	We added the 30° dip measure.
Fig. 10: c: please also label units A and B	Fig. 10 has been updated with labels A and B.
Line 319: sandy body (unit G) move the unit description up to the paragraph with the other unit descriptions	Done, see previous comment.

Line 320: could be referred to liquefaction rather explain what speaks in favour of liquefied material - do you see any typical sedimentological features like flame structures etc?	We added a sentence to support our interpretation (lines 329-331): “This interpretation is supported by its subvertical geometry, which crosscuts the entire stratigraphic succession down to the base of Unit H and is difficult to reconcile with natural depositional processes”.
Line 323 presence of local perched aquifers is documented: How?	We add the detail of the depth of perched aquifers and the associated reference (lines 332-333).
Line 328: probably referred to liquefaction event: This is a tricky part of the trench indeed. This paper reports imbricated gravels due to liquefaction, too: https://www.sciencedirect.com/science/article/pii/S0037073800000695 Takahama et al., 2000 You might want to cite it here or in the discussion to support your arguments	We thank the Reviewer for this helpful suggestion, which prompted us to expand the relevant bibliography. However, we believe that our original interpretation, assessing for the tectonic nature of the sc structures in the southern portion of the wall, is still the most appropriate.
5.3 Miane 3 Trench (via Giorgione)	
Line 343-344: morphological scarp: Is it a fault scarp? OK, it's parallel to the fault trend, but it is also parallel to the river, to the slope, and to the man-made terraces.	The scarp may not be entirely tectonic. In addition to considering the possible role of fluvial erosion, we already hypothesize that, at the trench site, the scarp has been modified by human intervention (e.g., terracing and road construction). Therefore, the measured elevation difference should not be considered entirely tectonic in origin. We added a part of the text explaining this aspect (lines 408-410): “Considering deformation, the morphological scarp associated with the fault trace (Fig. 12) is greater than the cumulative displacement documented in the trench, suggesting that post-seismic geomorphic evolution and/or anthropogenic modification may have contributed to its current morphology.”
Line 382: scarp coincides with: yes, but the faulting can not explain the scarp height and unit C is also not folded, so the scarp is somewhat mysterious to me - what is your idea on scarp formation? Lines 384-396: yes, I see that, but it's probably enough to have few centimeters if shortening to create this bulge - could have happened in the same event as the faulting	We have also clarified the folding deformation by distinguishing the deformation associated with the shear plane beneath the morphological scarp from the broad fold observed in the southernmost part of the trench, which we interpret as being related to a deep frontal splay (lines 403-414)
Lines 388-389: agree for an articulated deformation and seismic history of the fault plane: please rephrase, I don't understand what is meant	We rephrased as follows (lines 395-397): “In this regard, we detected at least two distinct coseismic events on the fault plane. In order to reconstructed the seismic history of the tectonic structure, we restored the trench wall log and successively we validated the restoration through the forward model construction in 3D Move (Fig. 16)”.
Line 398: standard value of about 15° for the original dip slope: Please explain - why 15°? What is this the standard value for? Is this the average dip of the unit B between 10 - 35 m?	We modified the sentence as follows (lines 404-407): “Moreover, the dip slope of about 15° measured on the southern portion of the wall is compatible with the deposition of distal alluvial fan,

Line398: folding deformation between 0 and 5 m in the trench, unit A and P dip steeper than the overlying units - is this why you infer folding? If so, please explicitly state it. Line 400: upwarping in the southern portion of the wall should also be considered can you extract any meaningful data from the warping? Like the shortening that would be required to create the bulge? Line 408: folding deformation affecting the entire stratigraphic succession. All this description of folding is a bit vague. Is unit C folded or not? If not (and that is what it looks like to me), the event must be older. Is D2 really folded and not just draped onto a pre-existing scarp? Line 411: recent times (M1) well, the gentle warping between 10-25 m could have happened in the same event as the offset of unit P, A, and B, right? FIG.16: D2 is pretty steep for a depositional unit... and actually, so is D1. It is not clear to me how the scarp formed.	while, at the hangingwall of the fault plane, unit A and P dip steeper than 15°, therefore we infer the presence of a buried reverse splay at the footwall of the main fault (between sections -1 and -3, Fig. 13) which caused the folding.” We also modified the text trying to better explain our interpretation of the folding deformation: we attribute the folding of the northern portion of the trench wall (units P, A and B – sections -1 to -3) to a buried secondary splay (lines 405-407). An additional reverse buried plane must be present in the southern portion of the trench wall (sections -35 to -19) which caused the folding of the entire sequence up to the topographic surface (lines 412-415). We also added the hypothesized buried reverse planes in the wall interpretation (Fig. 13 and in the supplementary material S4).
5.4 Miane 1 Trench (Vergoman locality)	
Line 425 Units A, B and C: Please describe them at least briefly. This is important because you use them as markers. So the reader needs to be able to judge if it's really unit C that sits next to the fault plane, because from the high-res orthophoto in the supplement it is not easy to see	Ok, we added a detailed description of the units (lines 441-442): “The Miane 1 trench investigated a series of local colluvial deposits (Units A, B, C), characterized by an average south dipping stratification (Fig. 19): the slightly silty clay with 30% gravel and cobbles (unit A), the gravel with

	silt and clay (unit B) and gravel with a silty-clayey matrix (unit C, clasts/matrix ratio =70-30%), alternating with silty clay lenses (unit C1)”. Line 430: 30 cm minimum displacement how did you measure it? I assume by the thickness of unit C? In the orthomosaic, I can't see the difference between A and C. There is also this coarse layer within unit A that you marked with a dashed line on either side of the fault - does this record 30 cm of slip? It's hard to see, it could also bend. I guess the gravels stop before reaching the fault zone. Please add a zoom-in photograph of the fault zone to convince the reader the fault is actually there. The faults in the other three trenches are presented in a more convincing way
	We thank the reviewer for this comment since it helped us to revise the vertical displacement measured in trench site Miane1. The dashed lines within unit A indicate the orientation of the identified layers and do not necessarily represent the same layer, as the layer is not continuous. Regarding the throw, since unit C is not present at the hangingwall of the fault, we measured the vertical slip on the top of unit A, thus estimating a cumulative minimum throw pre unit C. We know that the fault further activated after the deposition of unit C, but we are not able to estimate the amount of slip post unit C, therefore we did not include trench site Miane 1 for the reconstruction of the events (updated Fig. 21). We updated both the text (lines 448-452 and lines 491-495) and the figures accordingly. We add Fig.20 showing a detail of the fault plane, as for the other trenches.
Line 437 evidence of deformation: please describe it, not just mention it - it is not super-convincing in my view	See previous comment.
6 Discussion	
Lines 441-458: consider removing this entire section	We did, we removed this part of the text.
6.1 Source parameters (last event of activation and displacement per event)	
Line 461 historical: but you also have older deposits...?	We modified the sentence as follows (lines466-467): “...deforming and displacing Holocene deposits, including those of historical age, up to the ground surface”.
Lines 463-465 I would delete this paragraph, it's very confusing. Below you provide details on all deformation events, so better not confuse the reader by mentioning oldest and youngest deformed deposits over all trenches here.	Ok, we removed this part of the text as suggested by both the reviewers.
Line 467: main seismic events: E1 and E2 Why are E1 and E3 main events, and E2 is apparently minor?	We have modified the text by listing the three events from the outset. Each event is then described with detail (lines 468-487).
Lines 472-473: I think the age of this warping is poorly constrained, and I am not 100% sure it needs to be tectonic..	See previous comments.
Line 477:	We modified the text (see previous comment).

I don't understand why you not simply work systematically through all three events E1 to E3. This confuses me.	
Line 479: manufact artifact?	Replaced with “cobble-paved road”
Line 484-485: But in Fig. 20 you indicate that the 30 cm of throw date to 2000 BCE?	The updated throw value of 20 cm is referred to the minimum displacement cumulated up to the deposition of unit C (post B and pre C).
Line 491: AD, ADs, ADt... too many abbreviations = confusing	We removed some acronyms from the main text.
6.2 Possible historical earthquake	
Line 528: lost earthquakes please explain to the reader who are not familiar with Galli's paper	We added part of the text explaining the concept of lost earthquakes (lines 537-544): The concept of “lost earthquakes” (Stucchi et al., 2004) highlights the difficulties related to the reconstruction of historical seismicity and to the assessment of earthquake catalogue completeness. The absence of a historical earthquake from documentary records does not necessarily imply that the event did not occur, but may instead result from gaps in the production, preservation, or interpretation of historical sources. Therefore, catalogue completeness cannot be assessed solely through statistical approaches, but requires a critical evaluation of the historical and archival context in which seismic information was generated and transmitted. This issue is particularly relevant for poorly documented regions and for tectonic structures lacking clear historical seismicity, where apparent periods of seismic quiescence may partly reflect documentary gaps rather than the absence of past earthquakes.” We also modified the sentence in the Conclusions paragraph as follows (lines 566-568): “...numerous “lost” earthquakes affecting the Italian seismic record prior to the 15th century, whose absence from historical catalogues may reflect gaps in documentary evidence rather than the absence of seismic activity”.
FIG. 21: mark the study area	Done, now Fig.22
DISCUSSION	
What's missing from the discussion in a critical view on the warping and the nature of the scarp at site Miane3. I am not 100% convinced it is tectonic deformation that we see there. Also, all ages are taken as correct, but this is certainly not the case. Charcoal 14C ages (or charred material) is not necessarily close to the depositional age. Often yes, but not always - the charcoals may have been somewhere uphill in the landscape for an unknown amount of time. This can perhaps be neglected and there's not much we can do about it, but it should at least be mentioned somewhere.	We have added additional explanations at several points throughout the manuscript to clarify the aspects related to: - the nature of the scarp and warping of Miane 3 site (see paragraph Miane 3 Trench paragraph); - uncertainty of the C14 dating (see Methods paragraph)

Bulk organic material is often problematic. There are examples from paleoseismological studies where such ages are highly variable within one layer, that is, thousands of years apart. Again, not much can be done about that, but a note of caution would be good. The organic material that is actually dated in bulk samples could be pedogenic carbonate, recycled rock carbonate, plant remains, a mixture of all of that - who knows.	
Conclusions	
Line 536 linear I don't know what it means here	Replaced with: "surface rupturing".