Dear Silvia Gardin,

Thank you for editorial handling of our manuscript “A vast Caledonian fan and an Ediacaran arc: The contrasting provenance of Devonian clastics of Brunia (Bohemian Massif)”. We are now ready to submit a revised version of our manuscript based on comments raised by both reviews and the community comment by Armin Zeh. We have addressed most of the concerns raised by the reviewers already in the author responses including a detailed point by point response to A. Zeh. For convenience these are copied below. our responses are in red whereas the reviewer comments are in black.

We thank you for considering our manuscript for publication,

Sincerely,
Stephen Collett

**Review of Martin Jan Timmerman**

We thank the reviewer for his positive assessment and useful suggestions to improve the manuscript. We also apologise for taking time to reply, we were intending to wait for feedback from a second reviewer before responding but address some of the comments raised by the reviewer below:

Comment: “Brunia”: any specific reason for reviving this old name?

Reply: We follow the recommendation put forward in Hanžl et al. (2025) “In this text, we employ the term Brunovistulicum sensu Dudek (1980), who defined the unit as a crystalline basement block (with remnants of Ediacaran to lower Palaeozoic sediments), below the Devonian to Carboniferous sedimentary formations. The term Brunia should be used, if at all, rather to describe the Brunovistulian basement and its pre-Permian cover, all together consolidated during the Variscan Orogeny.”

We also note that far from being an old name that needed reviving, Brunia is widely used as evidenced by the following articles without overlapping author teams published in the past 12 months:

Hamdy, M. M., Zoheir, B. A., Meisel, T. C., Gamaleldien, H., Lasheen, E. S. R., & Abu-Alam, T. S. (2026). Geochemical, OH-Sr Isotopic, and Thermodynamic Insights into the Metasomatic and Metamorphic Evolution of the Saxothuringian Crust: The Case of the Kowadło Ultramafic Suite (SW Poland). Lithosphere, 2026(1), lithosphere_2024_102.

Nowak, M., Tajčmanová, L., Dąbrowski, M., Buisman, I., & Szczepański, J. (2025). Coesite Discovery in Eclogites Confirms UHP Metamorphism in the Orlica-Śnieżnik Dome (SW Poland). Journal of Metamorphic Geology.

Bezák, V., Klanica, R., Smirnov, M., Vozár, J., & Kováčiková, S. (2026). Major post-collisional shear zones in the magnetotelluric models across the Slovakian Alpides, Bohemian Hercynides and Scandinavian Caledonides. Geological Society, London, Special Publications, 557(1), SP557-2024.

Mazur, S., Palomeras, I., Schiffer, C., Vanderhaeghe, O., & Puziewicz, J. (2026). Lithospheric structure and tectonic memory of the European Variscan belt. Geological Society, London, Special Publications, 557(1), gslspecpub2025-7.

Schulmann, K., Catalán, J. R. M., & Schaltegger, U. (2025). Variscan orogeny: a three oceans problem. Elements, 21(6), 387-393.

Comment: Using the term “strata” for sedimentary rocks is of course OK, but using it also for deformed and metamorphosed amphibolite-facies metasediments is a bit confusing. In the latter case, I suggest you just use “metasediment(s)”. For example, “Ediacaran strata” for me means non-metamorphosed Ediacaran clastic rocks forming a cover to the magmatic and metamorphic basement.

Reply: We accept this point, especially as a means to distinguish between the amphibolite-facies metasediments and the suspected Ediacaran – early Cambrian cover. This change has been implmented.

Comment: Line 132: Ordovician sediments were only found in borehole Bibiela PIG 1. The best reference to the Cambrian – Ordovician cover is the overview paper by Buła et al 2015 (10.7306/gq.1203) and references therein.

Reply: The wording mistakenly used plural, we added the reference to Buła et al at this point.

Comment: Lines 194 – 200 and 221 – 230: A few local names and facies names are used here that are not shown in figures. Please have mercy on the reader not acquainted with the local stratigraphy.

Reply: Point accepted, we have reduced the use of local names and where possible incorporated them into the figures.

Comment: Lines 376 – 380: why compare a metasediment from the basement (Jabl1) with a sediment from its cover (Česká1)? I could not quite follow the argument.

Reply: Perhaps this was clumsily worded, it was not meant to compare these two samples directly but to highlight that of all the samples with near unimodal Late Neoproterozoic detrital zircon distribution these two were the most significant outliers and give explanation for why they might be outliers.

Comment: Lines 427 – 428: “”single occurrence in the Rhenish Massif” – please more specific: age of deposition and sample number / locality.

Reply: This refers to the Wartenstein Gneiss with data in Dörr and Stein, 2019 and Linnemann et al., 2024. Is specified in the revision.

Comment: Line 443: “(in Yılmazer et al., 2025)”. These data were debated by Şen (2025; 10.1016/j.precamres.2025.107939) with a reply by Yilmazer (2026; 10.1016/j.precamres.2025.107963).

Reply: Acknowledged, but the debate does not directly impact the point being made.

Comment: Line 511: “Upper Devonian strata of Saxo-Thuringia” – please add here labels A – L of figure 11b.

Reply: Implemented in revision.

Comment: Fig. 1 - why show Brunia in mousy grey? You may want to give it a more conspicuous colour. or frame Brunia and relate to figure 1b.

Reply: An extra is added to highlight the position of 1b and Brunia’s colour is modified.

Comment: Fig. 2 – Tišnov, Brana facies etc.: please make sure in Fig. 1 which areas or units are meant.

Reply: Tišnov facies is depicted beneath the symbol for UD52, Branná was not directly depicted as its definition and extent is not well defined, lithologically it is very similar to the Vrbno Facie and is traditionally it is included as part of the Vrbno Facies. The distinction between the two is made purely based on the detrital zircon data presented in this study nonetheless, we have tried to indicate it in Fig. 1b.

Comment: Fig. 9, caption: please lists sample numbers in section S3.

Reply: We now include the databse used to construct the figure in the supplement

**Review of Brendan Murphy**

We thank the reviewer for the positive assessment of the manuscript and for the many thoughtful suggested edits, many of which have been incorporated into the revised version. We also appreciate the two broader scientific comments, both of which raise important considerations.

The similarities between West Avalonia and Brunia indicate that their earliest histories were likely both within the peri-Rodinian (Mirovoi) oceanic realm. But these juvenile isotopic values would be similar no matter where they were originally located in that ocean. So their similarity is important in terms of process (i.e. may reflect a similar intra-oceanic arc origin), but may not imply contiguity at that time (I would expect data from all juvenile terranes in Mirovoi Ocean e.g. Arabian Shield, Tocantins to be similar).

We agree that juvenile isotopic signatures similar to those observed in Brunia and West Avalonia are not unique to those terranes and are characteristic of a broader peri-Rodinian (Mirovoi) oceanic realm. Comparable juvenile signatures are also recognised in the Arabian–Nubian Shield, peri-Siberian terranes, and parts of Central Asia. The broader significance of these juvenile domains within a peri-Rodinian framework is discussed in Collett (2025, Journal of the Geological Society). However, the chronological and isotopic overlap between Brunia and West Avalonia appears substantially closer than that between Brunia and the Arabian–Nubian Shield (partially illustrated in Fig. 8 of Collett, 2025, although Brunia itself is not shown there). In addition, the sparse older inherited components preserved within the detrital zircon record also show stronger similarities between Brunia and West Avalonia than between Brunia and the Arabian–Nubian Shield (see Supplementary Figure 2 of Collett, 2025). We agree that these similarities may primarily reflect comparable tectonic processes, such as development within juvenile intra-oceanic arc systems, rather than necessarily requiring direct contiguity. Nonetheless, the purpose of the present study is not to establish global peri-Rodinian correlations, but rather to evaluate previously proposed affinities between Brunia and West Avalonia using the available isotopic and detrital datasets.

The potential influence of orographic barriers could be considered. For example, the ancestral Amazon flowed westwards into the Pacific until about 10 million years ago when its course was changed by a pulse of rapid uplift of the northern Andes. Such barriers, as well as changes to those barriers would profoundly affect detrital zircon distribution.

We agree that the influence of topographic or orographic barriers on sediment routing and detrital zircon distribution is an important consideration. At present, however, we have been cautious not to overinterpret the paleo-topography because reconstruction of Devonian basin architecture remains complicated by the partially allochthonous character of several Devonian basin successions.

We acknowledge that a topographic or drainage divide within or adjacent to Brunia may represent an alternative explanation to persistence of the Rheic Ocean in the revised manuscript. This interpretation could be tested further as additional provenance datasets become available from the internal parts of the Bohemian Massif. Nevertheless, the presently available data suggest that there is no clear evidence for sedimentary mixing between Brunia-derived and Bohemian Massif-derived sources until deposition of the early Carboniferous Culm successions along the eastern Bohemian Massif (e.g., Xiao et al., 2024, Gondwana Research). We therefore infer that some form of drainage or sediment-routing barrier likely persisted during the Devonian, regardless of its precise tectonic or paleogeographic expression.

Xiao, Y., Rembe, J., Čopjaková, R., Aitchison, J. C., Chen, Y., & Zhou, R. (2024). Sedimentary record of Variscan unroofing of the Bohemian Massif. Gondwana Research, 128, 141-160. https://doi.org/10.1016/j.gr.2023.11.003

**Review of A. Zeh**

Line 23: the Rhenish Massif and MGCR (Spessart and Rögis = Mid-German Crystalline Rise) ….please add.

**Added**

Line 94: “These data reveal a localized contribution from a distal source, likely derived from the Caledonides of Scandinavia, and a dominant contribution from local sources, representing erosion of the late Neoproterozoic arc. The former clearly links Brunia to Laurussia in the Early Devonian, while the latter provides insight into Brunia’s late Neoproterozoic affinities.” This is interpretation and should be removed here.

**Accepted modified to “These data are integrated with compiled data from Brunia and surrounding regions (Collett, 2025) in order to test if Devonian and late Neoproterozoic–early Cambrian strata can be distinguished on the basis of detrital zircon data and for potential links in the provenance of the Devonian strata of Brunia to the internal parts of the Bohemian Massif, Avalonia, and/or Baltica.”**

Line 123: isotopically evolved that (than)

**Corrected**

Line 125: in outcrop(s) in the Silesian nappes i

**Corrected**

Line 255: located within significant zircon domains …. (take out significant)… yielded concordant U–

**Accepted**

line 259: Pb isotopic ages .. (take out isotopic)

**Accepted**

Line 260: The U–Pb isotopic data was acquired a….Better : …Uranium-Pb zircon dating was carried out at..

**Accepted**

Line 262: The Lu–Hf isotopic data w… Better…The Lu-Hf isotope analyses were ….

**Accepted**

Line 269: analytical standards …. Better use: …. reference material

**Accepted**

270: ages(n = 2,184) add space

**Corrected**

272 ff. …. Concordant data are defined as those with a concordia distance of <5%. Concordant data ……changover (of that). … this is not clear to me.

What means <5% (95-105% concordance?), also what is a "iterative single grain concordia ages" (at least give a reference here, and explain in method.

- Normally all ages <1000 Ma are (206/238 ages) and >1000 Ma (207/206 ages), is this convention followed here?

**Response in previous reply, we now clarify as follows "In this section and all comparative data we follow the recommendations of Vermeesch (2021) whereby concordance is calculated from the log ratio distance to the maximum likelihood composition on the concordia line (concordia distance) and iterative single grain concordia ages are preferred for reported ages. In this study, concordant data are defined as those with a concordia distance <5 as also applied in the zircon database established in Collett (2025)."**

293: and 2740 Ma (Fig. 6). – here it would be nice to point to Figure 6a, b etc., as Fig. 6 is quite complex!

**We have made this change in the revised manuscript and figure**

Line 294 (Fig.6a-e)

**Accepted**

Line 300: a )(relatively consistent) minor Neoarchean population (~2600 )

**Accepted**

Line 307: Only 20 out of 678 co….

**Accepted**

4.2 Zircons (better zircon grains, be consistent throughout the text)

**Accepted**

Line 326: plot on either side of the…. Better … show sub- and superchondritic eHft values (by the way CHUR is not shown in Fig. 7.)

**Modified to "have both weakly positive and negative εHf(t) values (−2.3 to +2.5)". CHUR added to Fig. 7.**

Line 330: range of (from) −8.9 to +9.6….with the oldest and youngest zircons showing the most negative εHf(t) values (not true).

**Rephrased to "The overall range encompasses values of −8.9 to +9.6 and the distribution forms a slight crescent shape, with the most negative εHf(t) values among the oldest and youngest populations, and the highest positive values observed in intermediate-aged zircons (1300–1250 Ma)."**

Line 339: with Hf-in-zircon isotopic compositions clustered at positive εHf(t)values (strange formulation, better …..with most Hf isotope data showing highly superchondritic εHft values between +4 to +11.

**Accepted**

line 341 Moravian and Silesian nappes…(please add a reference here)

line 380 a (Fig. 9a)→ just point to (Fig. 9) where all data are shown

➔ Mention 9a, 9b, 9c where appropriate, e.g. line 382: "generally lack this slightly negative component (Fig. 9a).

**Accepted**

5.1.2 Wider paleogeographic significance (remove wider from the titel!)

**Changed to regional**

Line 394 "With the Type-1 zircon spectra predominantly reflecting erosion of local sources within the Slavkov Domain" I wouldn't be so absolute here, its an interpretation.

**added that this is our interpretation**

Line 397: Previous studies (e.g., Košler et al., 2014; Soejono et al., 2022) have suggested (remove have)

**Accepted**

Line 404: proterozoic age maxima and significant (>20%) contributions of Paleoproterozoic zircons. (please add references here, and present an example; best showing such differences in a Figure). …Where

**Added reference to the appropriate figure panels.**

Line 404: Linnemann et al., 2014, 2018) and… Here please also mention the data from the Ediacarian Murgtal unit in the southern Black Forest (Modanubian Zone) of Zeh et al. (2024). Zeh, A., Zimmermann, M., Albert, R., Drüppel, K., Gerdes, A. (2024). Zircon U-Pb-Hf isotope systematics of southern Black Forest gneiss units (Germany) – implications for the Pre-Variscan evolution of Central Europe. Gondwana Research., 128, 351-367. doi.org/10.1016/j.gr.2023.11.008

**Adding these data to the figure do not further the discussion as they largely reflect other Gondwanan terranes represented by Saxo-Thuringia, for the same reason we haven't included data from Armorica, French Massif Central, Alps, Iberia etc. (refer to our previous work Soejono et al., 2024 Earth Science Reviews for a review of these datasets).**

Line 405: a wider range of εHf(t) values is observed → an extremely wide range … (from +10 down to -40) is observed

**Added significantly**

Line 408: also to Moldanubian (also at line 410)

**We deliberately do not refer to Moldanubia as Moldanubia is a complex unit and its provenance is poorly constrained, it is unclear how much the previously mentioned data from the reviewer in the Black Forest are representative for Moldanubia in the Bohemian Massif.**

Line 424: of our detrital zircon data with (take out of)

**Sentence doesn't make sense without of.**

Line 428: … from Brunia. (please add a reference here!)

**Added reference to panel in Fig. 9**

426 ff. Maybe worth to mentioning here that there barely combined U-Pb-Hf istope data from Eastern Avalonia, that can be used for comparison. Note, the data of Willner et al., 2013 from E- and W-Avalonia shows a much greater diversity in U-Pb ages and Hf istope data than reflected in Fig. 9h.

Willner, A.P., Barr, S.M., Gerdes, G., Massonne, H.J., White, C.E., 2013. Origin and evolution of Avalonia: evidence from U–Pb and Lu–Hf isotopes in zircon from the Mira terrane, Canada, and the Stavelot-Venn Massif, Belgium. J. Geol. Soc. London 170, 769–784. https://doi.org/10.1144/jgs2012-152.

**This is true, Willner et al. do have Hf-in zircon data from East Avalonia, but only four data points are in the discussed Late Neoproterzoic range and therefore not a statistically significant sample. They also have significant data from the Mira Terrane of West Avalonia, these show a greater diversity than Brunia, although not as much diversity as seen in Saxo-Thuringia. The same also applies to datasets from the British and Irish Isles in Waldron et al. (2019). Note that the range in these 'Avalonian' datasets is the same as the range in Brunia, only in Brunia the data is more concentrated at juvenile values. It is for this reason that we specifically restrict the comparison to data from Newfoundland where a similar concentration of juvenile values is observed. A more thorough analysis of the zircon-Hf isotopic data from Avalonia and associated terranes would be a welcome further step, but is considered beyond the scope of this study.**

Line 430: the Rhenohercynian zone (and the adjacent MGCR → Ruhla and Spessart Crystalline Complexes)

**Discussed extensively later doesn't need to be introduced here**

Line 432: Yes/No, there are Hf isotope data from the Rögis quartzite in the Ruhla Crystalline Complex (MGCR) = Rhenohercynian/Baltica derived spectra (see Zeh & Gerdes, 2010).

**Discussed later doesn't need to be introduced here**

Zeh, A., Gerdes, A., 2010. Baltica- and Gondwana-derived sediments in the Mid-German Crystalline Rise (Central Europe): implications for the closure of the Rheic ocean. Gondwana Res. 17, 254-263. doi:10.1016/j.gr.2009.08.004

Line 476: Timmerman et al.' (please present complete reference with year.., also in line 479.

**Accepted**

Line 491: Additionally, the significant ~1600 Ma maximum in the Type-2 Devonian strata (Cluster-3, Fig. 10d)….Sorry, both spetrca in (c) and (d) show minima at 1600 Ma (I mean 1670 is not 1600 Ma). So please change 1600 at least into 1670 or 1700 Ma!

**Changed to 1670 Ma**

Line 517ff: " German Crystalline Rise to Saxo-Thuringia is uncertain but it is generally considered to represent the northern extension of Saxo-Thuringia (e.g. Linnemann et al., 2025)" → This is complete nonsense. Since Zeh & Gerdes 2020 it is clear that the MGCR represents a composite terrane with parts belonging to the Rhenohercynian Realm /Avalonia (i.e., parts of the Ruhla Crystalline Complex and Spessart (see Kirchner & Albert, 2021) with the typical Baltica zircon age spectra (in presumable Silurian-Devonian rocks), while others are part of Saxothuringia (Brotterode KuK). In the southern part it additional consists of a juvenile arc terrane (see Beck et al 2026, IJES)

**Addressed in previous reply, text changed to "The Mid-German Crystalline Rise is a composite terrane with complex relationship to both Saxo-Thuringia to the south and the Rhenohercynian Zone to the north (e.g. Zeh and Gerdes, 2010; Dörr et al., 2021; Beck et al., 2026) and the Rögis quartzite is spatially associated with meta-sedimentary rocks with combined U–Pb and Lu–Hf isotopic data (Gerdes and Zeh, 2006) that most closely resembles those of the Góry Sowie Metamorphic Complex from the data compiled in Fig. 8". It is interesting to note but beyond the scope of this study that the sample Brotterode KuK does not show a typical Saxo-Thuringia spectra.**

Line 522: "tead, their zircon age distributions more closely resemble those of Teplá-Barrandia"→ better say show a typical Saxothuringian age spectra, similar to that from Tepla Barrandia.

**Point being that in the Fig. 11 samples from Tepla-Barrandia and the nappe units in the Harz mts. contain Paleozoic zircons and the sample from Saxo-Thuringia *s.s.* does not. Therefore we keep the original formulation with added reference to the figure.**

Line 530: Silurian strata from the Oslo Rift (Kristofferson et al., 2014; Sláma, 2016). Here the Hf data from Zeh & Gerdes 2010 (Rögis quartzite) should be shown as well for comparison, as these reveal the same patterns (perhaps plot these also in Fig. 12, upper right).

**Accepted, we also add the new data from Beck et al. (2026) from the Harz Mts. to complement these data.**

Line 586

5.2.4 Implications for continuation of the Rheic Ocean in the Devonian For my opinion, the entire paragraph could be deleted, as its content has nothing to do with the content of the paper, dealing with

provenence of of Devonian clastics of Brunia (Bohemian Massif). It's a discussion about data, which in some parts are not even well documented and available to the readership (Linnemann et al., 2025) and hard to follow, even for insider. Also, all discussion about the Rheic suture are far beyond the scope of the paper and would require a more comprehensive compilation.

**Addressed in previous reply.**

6. Conclucions

Too long. Should focus on the major findings without discussing certain points again.

**Disagree, the conclusions succinctly summarise the key points of the article.**

Figures

Fig. 1a (legend, for sake of clarity, all info about granitoids should be removed (also in the MGCR there are many granitoids of upper Silurian to lower Devonian age (430-390 Ma).

**Disagree, but we do acknowledge the Silurian to lower Devonian granitoids in revised figure.**

What is the blue-grey striped field standing for (not in legend)?

**Defined in caption, area of mixed Brunia/Moldanubia crust.**

Fig. 1b (legend should be sorted from oldest to youngest from bottom to top (not vice versa)

**Accepted**

Fig. 2: Would be nice to have tha absolute ages here for stratigraphic boundaries

**Accepted**

Table 1. I guess the header but also lining of the table was a bit disturbed during copy-past. This should be corrected in the final version.

**Table was originally planned to be in landscape but was reformulated as portrait during submission leading to disturbed text alignment. Will hopefully be fixed during production.**

Figure 4: ….. the caption perhaps should be rather: Cathodoluminescence images of representative zircons from each sample, with positions of laser spots for U-Pb and Lu-Hf isotope analyses…. All presented zircon ages have concordance level of 95-105%, and quoted uncertainties are 2 sigma. If you show the Hf spot, why not also showing ehft(t) results.

**Accepted**

Fig. 6. X-Axis should be shown complete at least for the lowermost diagrams, and start at the 0 intercept of the Y-axis. Age (ma) should be shown beneath the x-axis. Please show a, b, c, d etc., and perhaps show type 1 and type 2 in diagrams.

**Accepted**

Fig. 7. The dotted line (CHUR) should be explained.

**Added explanation to figure and caption**

Fig. 9. Compiled zircon age- ehft(t) data of……rocks from ….Massif. It would be good to present the data sources directly in the Figure caption! To me its not clear what the "age peaks" are good for, this comparison should be done elsewhere and is confusing here (perhaps show in Fig. 8). Also the diagrams doe not explain the isolines nor where these are coming from, and on how many data these are based on (percentage is relative, better would be absolute numbers).

**References added to caption and all data used to construct the diagrams now included in supplement. The age peaks are useful to demonstrate the shape of the late Neoproterozoic maxima (narrow in Brunia and Newfoundland; broader in Saxo-Thuringia, Tepla-Barrandia) this is clearly discussed in the text. Added contours definition and how they were calculated in the caption.**

Fig. 10 MDS (please say Multi-dimensional scaling) ……(b–d) Representative histograms and KDE , this is not correct as in Fig. 10a only data >800 Ma were used!

**It is correct as it is the data used in the construction of the MDS diagram, this is clearly stated in the caption. The fact that only >800 Ma zircons were used is also addressed in text, diagram and caption.**

Fig. 11. Devonian strata in the Bohemian Massif…. Its not just the Bohemian Massif there are also data from the Saxothuringian Domain, the MGCR and the Rhenoherycynian Zone (this should be mentioned here. Perhpaps better say in Central European Variscides.

**Updated to Bohemian Massif and adjacent smaller massifs. Note that Saxo-Thuringia is a constituent part of the Bohemian Massif.**

➔ In caption: ….K18….Koglin et al. (2018);

**Added**

➔ In the MGCR tsyn-collisional magmatism occurred during the late-Silurian/ Early Devonian (425-395 Ma)! and Visean 340-330 Ma

**Acknowledged in legend**

Fig. 12. Its not clear where the Hf data of Fennoscandia are coming from (Krystoffersen & Andersen?). Also the Age-Hf diagram is neither a-b-c, etc, and nowhere really mentioned in the Figure caption.

**Added to caption, also added data from Rogis quartzite and Harz Mts.**

Fig. 13: …. is the exposed Slavkov Terrane basement (not explicit shown in the Figure, please add). Stiped domains are not explained in legend.

**Added label for Slavkov Terrane**

Comment: Such a figure can be presented, but it don't considers the dynamic of the Variscan Belt formation. For example, its shows a scenario that the sediments were delivered from source to sink during the Early Devonian, which is hard to believe. Also, where is Avalonia in this Figure? The greatest problem I have is, that the Figure suggest a kind of stable shelf but instedt the souther margin of Avalonia was controlled by a magmatic arc (at least in the German part of the MGCR), with a kind of back arc basin behind, which existed from the Silurian until the Late Devonian (=Rhenohercynian Basin).

For Details see Zeh & Gerdes 2010). Formation of the back arc basin was accompanied by destruction of the southern Avalania margin.

**It is true, it is hard to capture all of these elements within a single snapshot. We have added volcanic arcs to the Rhenohercynian margin to make it more evident this is a sort of back-arc domain in which these type-2 strata were deposited. It is not the intention of the diagram to show direct source to sink sediment dispersal, yes the diagram shows regional flow directions but it is clearly stated in the text that "This similarity in detrital zircon spectra should not be taken to imply a single vast interconnected basin, but rather a network of detrital pathways likely reflecting multiple erosional–depositional cycles with limited in-transit mixing, and originally derived from a relatively restricted source region". We have nonetheless added an extra clarification in the figure caption.**

Fig. 14. This goes far beyond the scope of the paper. If Collet wants to write a paper about distinct provenance in Europe fine. To my opinion, this Figure should be removed. It just summarizes and repeats data collected in Colett 2025, which mostly have nothing to do with Brunia!

**Accepted, see previous reply**

ESM

In the Lu-Hf Table for the unknowns, no results of 176Yb/177Hf and of stable isotope ratios (e.g., 178/177) are presented (Why not? Please add.)

**Added**

Lu-Hf standard statistics: Comment: Uncertainties of reference material measurements should ever be presented as 2sigma of the mean (=STABW*2), and not as weighted averages!!!!!

**Corrected**

U-Pb standard statistics: Unclear what mean the presented values are? Concordia ages?, weighted mean 206/238 ages?, please specify. What is the number of analyses involved?

**Concordia ages, better described in caption in revised version.**