Reviewer 1	Comment	Answer
1	inconsistencies such as "Fig.??" (§ 430)	We thank the reviewer for carefully checking the manuscript and pointing out the inconsistencies. We have provided the corresponding corrections, in the reviewed manuscript.
2	ensure consistent formulations, for example, with phrases like "5 presents..." (§ 365)	We thank the reviewer for carefully checking the manuscript and pointing out the inconsistencies. We have provided the corresponding corrections, in the reviewed manuscript.
3	Furthermore, subsection 4.2 would benefit from a more comprehensive explanation of the 137Cs peak attribution. The reported dating of the Chernobyl peak at 1989, based on the calculated age-model, introduces some ambiguity; a clearer exposition of how this aligns with the model's inherent uncertainty would enhance clarity.	L284:"The 137Cs peak at 86–87 cm is consistent with the 1986 Chernobyl fallout, as reported in other studies conducted in the region (Sabatier et al., 2008; Meusburger et al., 2020). In our case, the age model assigns this peak to 1989, with an uncertainty range of [1983–1989], which encompasses 1986. This overlap supports the attribution to Chernobyl and validates the age model within approximately ±3 years—an uncertainty that falls within the same order of magnitude as reported in the existing literature (Sanchez-Cabeza and Ruiz-Fernández, 2012; Simms et al., 2008)."
Reviewer 2		
1	Main weakness of this paper is the lack of links made between the three types of data analysed: core analysis, precipitation analysis and hydropower generation analysis. Ultimately, the lack of clear results linking these data leads to speculation rather than discussion.	We agree with the reviewer about the fact that the lack of correlation between the sediment core and precipitation analysis can represent a weakness in the study. The age model uncertainties led us to be prudent in the association of sediment core high energy event detected and precipitation data. Indeed, the lack of correlation between sedimentation, precipitation and hydropower led us to find a site dependant explanation. The correlation of hydropower with a water variation from setpoint was a way to see what may explain better the lack of link between the environmental variables and hydropower.

2	My feeling is that an analysis of the sediment dynamics in the dam reservoir is missing. Additional data on water discharge (apparently available from BRL) and suspended sediment concentration would be very useful. It is a pity not to have an estimation of the sediment yield, including a discussion of its temporal variability.	We fully agree that continuous hydro-sedimentary data would have been extremely valuable to reinforce the link between precipitation, hydrology, and reservoir sedimentation. In our case, however, such datasets were not available at a suitable temporal resolution or time range. **Discharge.** Inflows were not directly measured but reconstructed by the dam operator from water-level variations during 1996–2005 (the only period available /provided to us). These values are therefore not independent from the water-level series already used in our analyses of hydropower generation, and their temporal coverage is too limited to be integrated consistently with the sediment core record. **Suspended sediment concentrations**. Measurements were performed only sporadically (about three times per year). The only continuous time series publicly available in the operator's reports correspond to monthly arsenic concentrations between 2003 and 2008. According to our confidentiality agreement with the operator, we are not authorized to publish results that involve sensitive parameters such as arsenic. For this reason, the arsenic time series available in the operator's reports could not be integrated with our sediment-core analyses. Furthermore, the report itself acknowledged that such measurements may not capture flood events, water spills, or reservoir mixing episodes. Additional sediment quality data were collected during the last complete drawdown of the dam in 2000, but again without sufficient temporal resolution for our purposes. Taking into account that the dam operation had three different period of managing water level. Because dam operation followed three different regimes of water-level management, the dataset covering 2000–2008 (not provided by the operator) may not be fully representative of conditions during the two other management periods.
3	From my point of view, one objective would be to determine the origin of the 27 events observed for the ORB09 core and explain why other significant hydrological events were not captured by the core. Possibly, a numerical modelling of the dam reservoir could also provide some interesting information.	This was one of the tasks we attempted through a time-lag correlation. However, the propagation of model uncertainties resulted in an increasing misalignment along the sediment core, making the approach unreliable. Therefore, to overcome this limitation, we tested a Dynamic Time Warping algorithm to evaluate potential similarities between precipitation peaks (for various thresholds) and normalized annual sediment fluxes. Nevertheless, this analysis did not yield quantified or exploitable results. For transparency, the corresponding graph is provided in the response.

4	There are too many figures in appendix and in the supplementary materials that are discussed in the text making the reading quite difficult. First, I suggest to use supplementary materials only (no appendix); Second, do refer to the supplementary materials (or appendix) only for additional information, not for to provide additional arguments for your study	We agree with this suggestion. The figures previously located in the appendix have been moved to the supplementary materials. We ensured that these figures are referred to in the main text only to provide additional information, and not to introduce new arguments.
5	There are still many typos, which shows that the article has not been proofread very well. I have made some corrections in the “minor comments” section, but I may have missed many	We thank the reviewer for carefully checking the text and pointing out several typographical and style issues. We have thoroughly proofread the revised manuscript and correct the citation style, operator name formatting, and other minor inconsistencies as suggested ex: "(Sanchez-Cabeza and Ruiz-Fernández, 2012; Simms et al., 2008)"
Minor coments		
1	Minor comments	
2	• Why adding initials after each name?	Initials were removed.
3	• L23: It would be more correct to also present drawbacks from hydro-power dams.	L24: "Nevertheless, reservoir infrastructure is well known to generate ecological impacts, including disruptions of river connectivity, sediment dynamics, and riverine biodiversity (He et al., 2024), as well as social challenges such as population resettlement (Wang et al., 2017). In addition, the availability of water stored in these reservoirs is strongly dependent on regional hydroclimatic conditions"
4	• L30: “runoff_(“	L33: "runoff (Shu et al., 2018; Anghileri et al., 2018)."

5	• L32: “Intergovernmental Panel on Climate Change (IPCC)”; Since it is cited several times,I’d suggest to write “(IPCC, 2023)”	The Intergovernmental Panel on Climate Change (IPCC, 2023b) mentioned explicitely one time and quoted as IPCC forward.
6	• L54: “wear_(Hauer”	L56: "wear (Hauer et al., 2018)."
7	• L57: One interesting discussion would be on the effects of global change on these figures.	L61 : "These figures should however be relativized, as climate change impacts may either exacerbate or reduce sediment loads depending on regional hydro-climatic conditions. For instance, projections indicate increases of up to +14 % in sediment delivery in the Elbe basin (Uber et al., 2022) and a 41% rise in road-related erosion in the western Carpathians (Juško et al., 2022), whereas reductions between -18.1 % and -52.8 % (Abdelwahab et al., 2025) in sediment loads have been projected for the Carapelle basin in southern Italy (Mediterranean region). In addition, sediment load estimates remain highly sensitive to the choice of meteorological data, reference period, and model ensemble (Szali ´nska et al., 2024), underlining the large uncertainties that accompany future projections."
8	• L62: “Raymond et al.” → “Raymond Pralong et al. (2015)”	L70: "Raymond Pralong et al. (2015)"
9	• L64: m3. day− 1 ; I don’t see the interest to add a unit if no figure is introduced	The unit was removed
10	• L66: reference?	L73:"In parallel, the Skagit River Basin in the Washington State (USA) is predicted to observe a 29% reduction in summer hydropower generation, a 19% increase in winter hydropower generation and a 335% increase in sediment load (Lee et al., 2016). This study was conducted using a suspended sediment transport equation developed based on historical measurements of sediment loads available for the Skagit River between 1974 and 1993, and then between 2006 and 2009 (Curran et al., 2016)."
11	• L79: “Foucher al. (2023)”	L86 "Similarly, Foucher et al. (2023) examined how variations in precipitation and sediment fluxes affected water availability for hydropower production in the Poechos Reservoir, northern Peru"
12	• L80: suppress “(Foucher al., 2023)”	L86:"Similarly, Foucher et al. (2023) examined how variations in precipitation and sediment fluxes affected water availability for hydropower production in the Poechos Reservoir, northern Peru"

13	• L81: What do you mean by “sediment variability”? Erosion rates, sediment fluxes?	L88:"Nevertheless, a significant knowledge gap persists regarding the long-term combined influence of precipitation and sediment flux variability on hydropower facilities, particularly in terms of historical production trends and operational implications"
14	• L95: use unbreakable space between figure and unit: 145 km	L102 "The Orb River, which rises from Mount Bouviala in Aveyron, France, runs for 145 km"
15	• L107: Any reference for this argument?	L116: "Although both types of land use change occurred near the reservoir, they were considered to have a limited impact on long-term sediment supply, as also suggested by Folton et al. (2020)"
16	• Fig. 1: Difficult to see were in France the site is located. Instead of a world map, please use a more precise map (of Europe) showing where subplot 1a is located. For Fig. 1b, it would be useful to better highlight the hydrographic network	We thank the reviewer for the suggestion. We replaced the world map with a Europe-centred one and added the Strahler ≥ 8 streams to better highlight the hydrographic network in Fig. 1
17	• L127: What do you mean by “instantaneous deposits”?	L135: "Samples were collected near the dam to obtain sediment cores that are minimally affected by high-energy deposits (hereafter referred to as “instantaneous deposits”) and thus cover a longer time period, as the sedimentation rate was expected to be lower in this area"
18	• L160: I suggest to use appropriate variables for the grain size characteristics: D10 , D50 , and D90	L169:"For each sample, particle size was characterized by the diameters of the fine D10, median D50, and coarse D90 fractions, corresponding to the 10th, 50th (median), and 90th percentiles of the particle size distribution, respectively"(10,50 and 90 were set as index)
19	• L168: “(Appleby and Oldfield, 1978)”	L175: "Sediment chronology was determined using the CF:CS model (Constant Flux: Constant Sedimentation), which assumes a constant rate of 210Pbex from atmospheric fallout with a constant rate of sedimentation, as no change in annual sedimentation rate trend was observed (Appleby and Oldfield, 1978)"
20	• L171: “(Arnaud et al., 2002)”	L179: "A depletion in 210Pbex activity in the measured section likely indicates the occurrence of a significant flood event deposit (Arnaud et al.,2002)"
21	• L183: “Mass Accumulation Rate (MAR) in”	L192 : "the Mass Accumulation Rate (MAR, expressed in g cm−2 yr−1)"

22	• L191: What is the interest to fill this gap?	L200"The only missing data correspond to August and September 1982. In the literature, and according to international guidelines, it is recommended to handle missing data to ensure data integrity and homogeneity (WMO, 2022)"
23	• L199: unbreakable space: 100 mm	L203: "...the resampling was constrained by an upper limit of 100 mm"
24	• L200: “10 mm”	L210:from 100 mm to 150 mm, with a 10 mm step,
25	• L205: “Ribes et 205 al. (Ribes et al., 2019)”	L216 with Ribes et al. (2019),
26	• L223: “generation (obtained from (BRL, (2011) and data provided by BRL—“	L232: Pearson correlation analyses were conducted to assess the relationship between annual hydropower generation (obtained from BRL (2011)) and precipitation totals at both annual and seasonal scales
27	• L230: “430 m_NGF”	L236: a maximum water level of 430 m_NGF (Nivellement Général de la France)
28	• L231: “proposal by BRL” (not in italic) → check everywhere	L247: "provided by BRL"
29	• L243: Any hydro-sedimentary data? It would have been very useful to have discharge and suspended sediment concentration time-series to reinforce the link between precipitation data and dam reservoir sedimentation. I’m a bit surprised there is no discharge data at least close to a dam as dam manager usually have to respect rules for minimum flow discharges. There is a large gap here leading to additional hypotheses.	We fully agree that continuous hydro-sedimentary data would have been extremely valuable to reinforce the link between precipitation, hydrology, and reservoir sedimentation. In our case, however, such datasets are not available at a suitable temporal resolution. **Discharge:** Inflows were not directly measured but re-constructed by the dam operator from water-level variations during 1996–2005 (the range the operator could provide us). These values are therefore not independent from the water-level series already used in our analyses, and their temporal coverage is too limited to be integrated consistently with the sediment core record. **Suspended sediment concentrations**: Measurements were only performed sporadically. The only continuous time series publicly available in the operator’s reports correspond to monthly arsenic concentrations between 2003 and 2008. According to our confidentiality agreement with the operator, we are not authorized to relate these arsenic data to our sediment-core analyses. Moreover, their monthly resolution is not adequate to investigate short-lived flood events such as those recorded in the sediment archive.

30	• L246: Illustrated where? On what criteria did you subdivided the core into different units? It looks a bit subjective.	A breakpoint detection algorithm from the ruptures Python library was applied to the Zr/Rb signal, which was measured at a resolution of 1 mm. Several numbers of breakpoints were tested. The solution with two breakpoints appeared to best capture long-term changes in the record. When three or four breakpoints were imposed, the algorithm consistently identified an additional change within the upper ~30 mm layer, which corresponds to a flood event deposit rather than long-term stratigraphic units. For this reason, we retained n = 2 as the most parsimonious and geologically meaningful solution for the breakpoint analysis. Stratigraphic units were added in the table and it can be seen in Fig. 2. L155 " To validate visually the breakpoints identified with their Zr/Rb ratio, the ruptures Python library was applied using the least-squares ('l2') model to delineate stratigraphic units"
31	• L248: Isn't it corresponding to seasons or to flood events?	Model resolution, its errors and the limited number of light brown strates does not allow to affirm if the strate correspond to a specific season or a particular event. However, the light brown strates seems to coincide with Zr/Rb and / or relative density peak. According to our floods proxy detection methodology this light brown layer might be assimilated to floods.
32	• L251: Referring to figures (and tables) in the text, in appendix, and in a supplementary material makes the reading a bit difficult. I'd suggest to move all appendices to the supplementary material.	We thank the reviewer for the suggestion. Therefore, we have moved all figures previously located in the appendix to the supplementary materials
33	• L252: "medium/high (?) relative density". From Fig. B1, the averaged relative density appears of the same order of magnitude of thewhole stratigraphic profile…	L261 "In Unit 1, the 0–3.0 cm layer shows mean Zr/Rb (1.4) and relative density (131.2) values, higher than the stratigraphic averages excluding Cevenol episodes (1.0 for Zr/Rb and 119.9 for relative density"
34	• L254: end → bottom (?)	L262 "A marked increase in grain size is observed toward the bottom of this section"
35	• L257: How is it confirmed by CT-scan images?	L265: "This unit contains crushed leaf residues, as observed in Figure 3 and confirmed by CT-scan images"

36	• L264: It would be interesting to discuss the term event? Does it really correspond to a Cevenol event, a large flood event?	The term “event” was used deliberately as a cautious designation, since it was not possible to link each layer with a reasonable level of certainty to a specific Cévenol episode or large flood, except for the two most recent Cévenol events recorded at the top of the core
37	• Tab. A1: How are the uncertainties in the dating evaluated ?	In Table S2: "Age uncertainty was computed using the delta method (first-order error propagation)"
38	• L267: One important issue with age model is erosion periods. How can you assess there were no significant erosion periods?	We assessed potential erosion or hiatuses by examining the 210Pbex profile. Its log-linear decline with depth shows no breaks or inversions, which are typical indicators of sediment erosion or disturbance. This supports the assumption that no significant erosion periods affected the core
39	• L268: “in Figure 2”	L279: "The resulting 210Pbex age model is presented in Fig. 3."
40	• L273: So, how do you interpret these two 137Cs peaks? It would be useful to add age model figures for ORB01 and ORB06 cores in the supplementary material.	L282 : "Two 137Cs peaks were identified along the core. The first peak corresponding to an activity of 15.6mBq · g−1 is located between 86 and 87 cm depths, while the second 9.8mBq · g−1 is found between 64 and 65 cm. The 210Pbex age model dates the first peak to 1989 and the second peak to 1997-1998. The 137Cs peak at 86–87 cm is consistent with the 1986 Chernobyl fallout, as reported in other studies conducted in the region (Sabatier et al., 2008; Meusburger et al., 2020)" L439"The second peak, detected higher in the sequence (Unit 2, dated to 1997–1998), may reflect sediment remobilization or bioturbation. The model chronology spans from Sept. 2023 to ca. 1986." In addition ORB01 and ORB06 age model were added to supplementary material.
41	• L274: These SAR-values are very high! Does it mean ORB01 and ORB06 cores correspond to 9 and 5 years of deposit only? Yes, indeed.	Yes, according to the 210Pbex modelling. For this reason, we focused on the ORB09 sediment core, which covers a longer time range and includes the presence of the 137Cs marker
42	• Fig. 2: For the first graph, what is the meaning of the grey and orange colours? What about the 137Cs model? It is not discussed here. What is just used to evaluate uncertainties? Any interpretation of the peak value at z≈650 mm ?	Fig.3 "Age model constructed for the ORB09 sediment core using fallout radionuclide activities. From left to right: measured 210Pbex values (orange dots indicate values retained for the model, grey dots excluded from depleted layers)..."

43	• L283: Tab. C1 indicates discharge data from Monts d'Orb dam (it does not correspond to precipitation data from the Roqueronde station). That means there is some kind of hydrometric station with a discharge time-series for the studied period. Why just then focusing on precipitation data that may not be representative (local data)? Discharge data at the dam (together with dam reservoir water level data) are the most interesting data to discuss the potential deposition in the dam reservoir. Precipitation data could provide some information of the potential erosion of the watershed. However, a measurement of the suspended sediment concentration (thanks to a calibrated turbidity meter) would be much more useful.	We acknowledge the relevance of inflow data, which are available for the period 1996–2005. In contrast, the BRL report provides only limited information on suspended sediment.

44	• Fig. 3 is of real interest. It would have been very interesting to confront the results from this method to those of a hydrometric station where water discharge Q(t) and concentration C (t) could be available. If there is no turbidity station, a rough estimate of the concentration could be done based on discrete samples using some fit as a function of water discharge, i.e. C=aQb +C 0 . I understand that the only hydrometric station corresponds to the dam (an so is influenced by dam regulation); it is hoxever better than nothing.	We acknowledge the interest of comparing our sediment accumulation estimates with fluxes reconstructed from hydrometric data using a Q–C relationship (e.g. $C = aQ^b + C_0$). However, no suspended sediment concentration records, nor sufficient discrete sampling data, are available for the Mont d'Orb reservoir. Inflows are documented only for 1996–2005 and sediment information in the BRL report is very limited, which precludes the calibration of such an empirical Q–C model. This lack of monitoring data highlights the relevance of sediment cores as a tool to reconstruct long-term sediment dynamics at this site.
45	• L294: I guess the choice of defining two periods before and after 1986 corresponds to the limit of the ORB09 core. It should be clarified	L315: "To assess changes in dry conditions, we generated a violin plot of the 12-month Standardized Precipitation Index (SPI-12) for the periods before and after 1986, which represents the midpoint of the datase"
46	• Fig. 4c: To be consistent with other graphs, change "first period" to "period before 1986" and "second period" to "period after 1986"	We change first period for Precipitation before 1986 (mm) and second period for Precipitation after 1986 (mm) in Fig. 5
47	• L311: A similar analysis of the discharge time series would be of interest	We would be interested in conducting such a study; however, the available time series is limited to 1996–2005.
48	• L312: Again, if you discuss figures in appendix in a similar way as those in the text, that means these figures should be in the text	We have removed all redundant figures from the appendix and placed them in the supplementary material.

49	• L357: “(Fig. S7).”	L375" (Fig. S11)."
50	• L359: “material_to”	L376 "material to"
51	• L360: A significant effort was made here to find differences in precipitation characteristics between the two periods and/or between seasons. I’m not sure to follow what the authors want to demonstrate looking at the objective of better understanding the reservoir sediment dynamics	We understand that the absence of a one-to-one correspondence between high-energy precipitation events in the instrumental dataset and the layers detected in the sediment core may give the impression of a weak connection. However, this reflects the propagation of model uncertainties rather than a lack of hydroclimatic influence on sediment yield peak through the core. Statistical approaches remain useful to characterize broader trends in drought frequency and extreme-event intensity, which represent key pressures on the reservoir system. Importantly, the objective of this study is not restricted to linking individual precipitation events with sediment layers, but to assessing the combined impact of rainfall variability on sediment dynamics and hydropower generation
52	• L365: “Figure 5”	L382: "Figure 6"

53	• Fig. 5 is of interest but is quite difficult to interpret in term of sediment dynamics in the dam reservoir since hydropower generation is not very correlated to discharge. Also, how is the dam managed managed during large flood. This could significantly affect the sediment dynamics during large events. In addition to the general trend, it would be interesting to plot the trend for each of the three operation periods.	We agree with the reviewer that this figure does not directly allow us to infer sediment dynamics in the reservoir. The only sediment-related information that could theoretically be linked to water level management would be drawdowns, but according to the operator, the last three drawdowns were carried out only for maintenance purposes, without any sediment removal. The main objective of this figure was therefore to highlight how water level management decisions have historically affected hydropower generation, rather than to reconstruct sediment dynamics. Regarding flood management, this is indeed a highly relevant question. Based on discussions with the operator, practices during floods depend both on the initial water level and on the season. For example, during autumn floods, if the flood-induced rise in water level remains below the maximum setpoint, water is usually allowed to settle in the reservoir. Conversely, if the level approaches the maximum authorized limit, water is released through spillways. These insights illustrate that operational responses during floods vary, although no direct monitoring data are available to quantify their effect on sediment dynamics. Finally, in response to the reviewer's suggestion, we have added trend lines for each of the three operation periods to better illustrate the changes in hydropower generation under the different management regimes

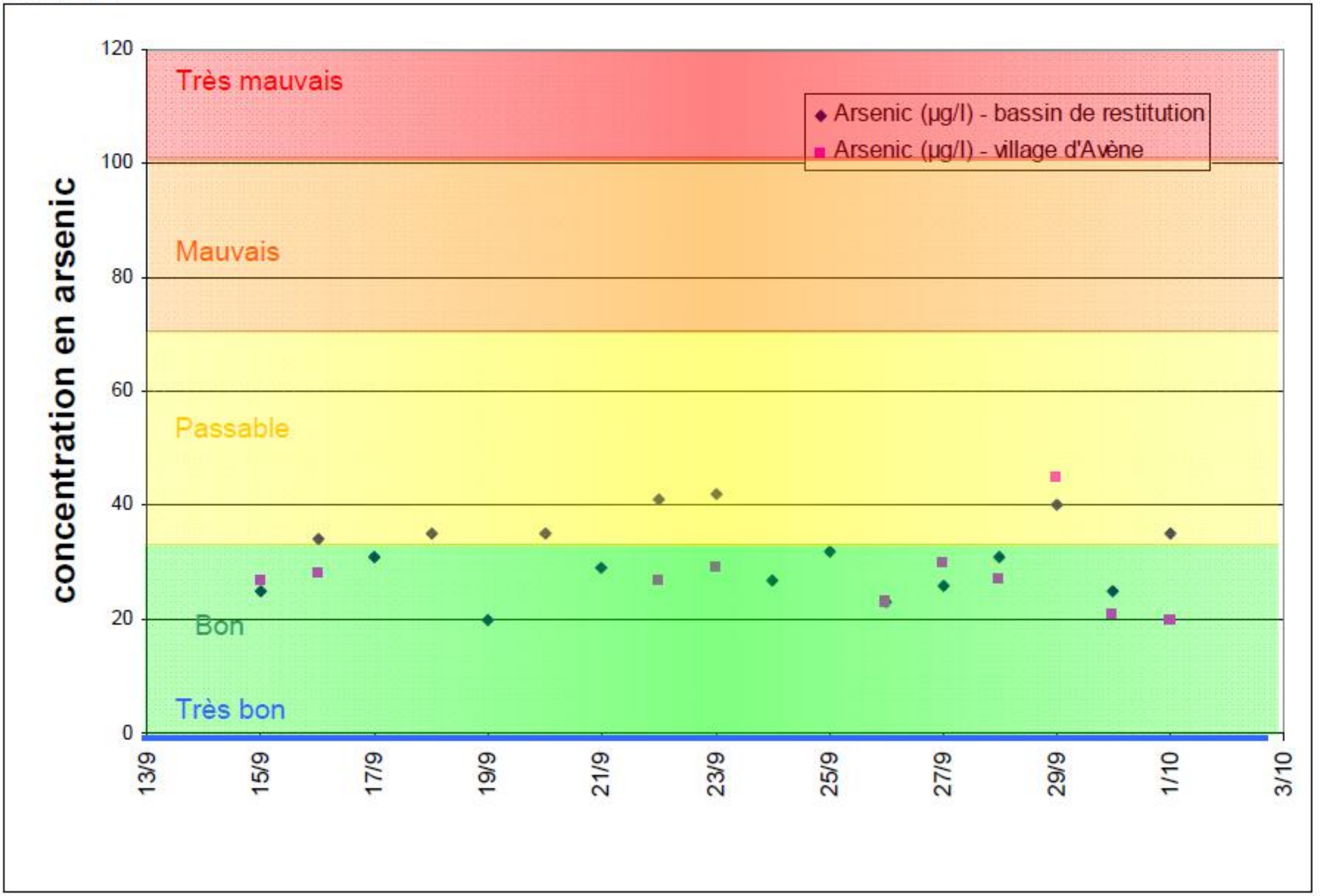
54	• L390: This discussion of the changes in seasonal precipitation is of interest. What about the effects on dam reservoir sedimentation and management?	We agree that the connection between past hydroclimatic changes and sediment dynamics in the reservoir is of high interest. Our sediment core (1986–2023) shows an alternation of continuous sedimentation and flood-related deposits, but no significant shift can be detected within this limited time interval. Based on the precipitation dataset, one may hypothesize that the relative contribution of high-energy deposits has increased in recent decades, but this remains speculative and cannot be directly validated with the core. For this reason, we chose not to expand this hypothesis in the manuscript and kept the discussion focused on hydroclimatic variability and its possible implications for reservoir management. We also take this opportunity to acknowledge once more the reviewer's earlier recommendation on modelling, which we agree would provide valuable insights, even if it lies beyond the scope of the present study
55	• L402: This discussion corresponds to speculation on the potential effect of the changes in rainfall on soil erosion. It does not provide any clue on what you observed during the last twenty years.	We understand the reviewer's concern that this section appears speculative and does not provide information on the last two decades. As shown in Fig.4 the sediment core (1986–2023) shows an alternation between continuous sedimentation and flood-event deposits, but no significant change can be detected within this interval. This is why our discussion of longer-term shifts relies mainly on the precipitation dataset, whereas the sediment record is interpreted more cautiously

56	• L418: I expected more discussion on the different events possibly observed through the core analysis. Why do you present this (short) discussion on two recent events only?	We acknowledge the limited association between the different instantaneous deposits detected in the core and specific flood events. We identified a cluster of major deposits within Unit 2 (estimated between 1994 and 2005), which may correspond to the series of major floods documented in the BRL report between 1996 and 2004. However, age-model uncertainties and the resolution of our chronology prevent a robust event-by-event correlation. The non-constant time lag and the limited temporal resolution make it particularly difficult to distinguish multiple floods occurring within the same year. For this reason, our discussion focused on the two most recent events, which could be assessed with greater confidence since fieldwork was conducted within two weeks of their occurrence. The combined signatures of 210Pbex , 7Be, Zr/Rb, and relative density strongly support the interpretation that the uppermost layers correspond to two high-energy precipitation events also recorded in the recorded precipitation datase.

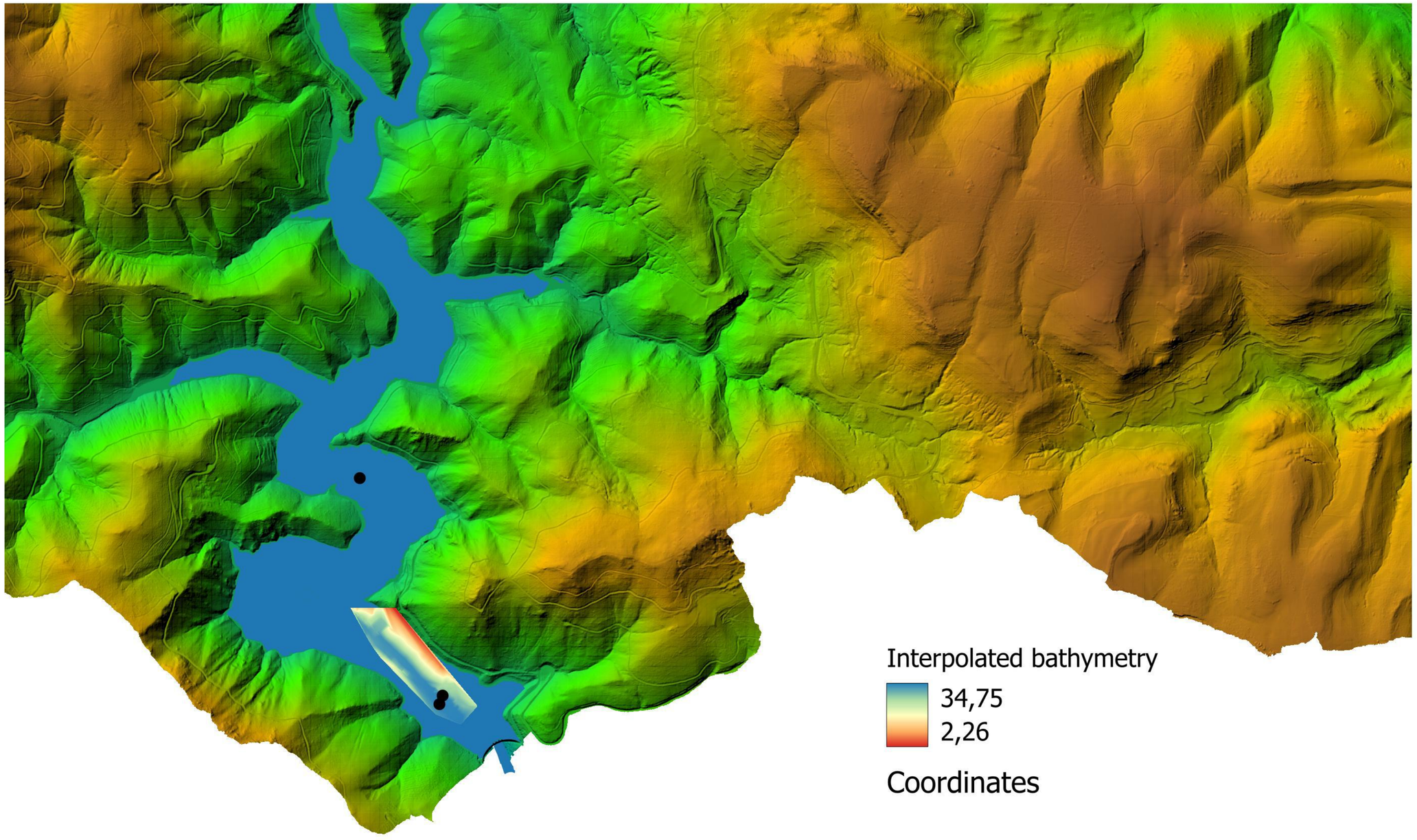
57	• L422: This should appear in the result section	We agree with the reviewer on the relevancy of moving this part into the Results section. The corresponding paragraph in the Discussion was modified accordingly and now states: "As mentioned in the Results section, the lower ˆ137Cs peak in Unit 3 was associated with the 1986 Chernobyl fallout, providing an independent validation of the age model. The second peak, detected higher in the sequence (Unit 2, dated to 1997–1998), may reflect sediment remobilization or bioturbation. The model chronology spans from Sept. 2023 to ca. 1986"
58	• L431: “(Fig. ??)”	L445: "Table S3"

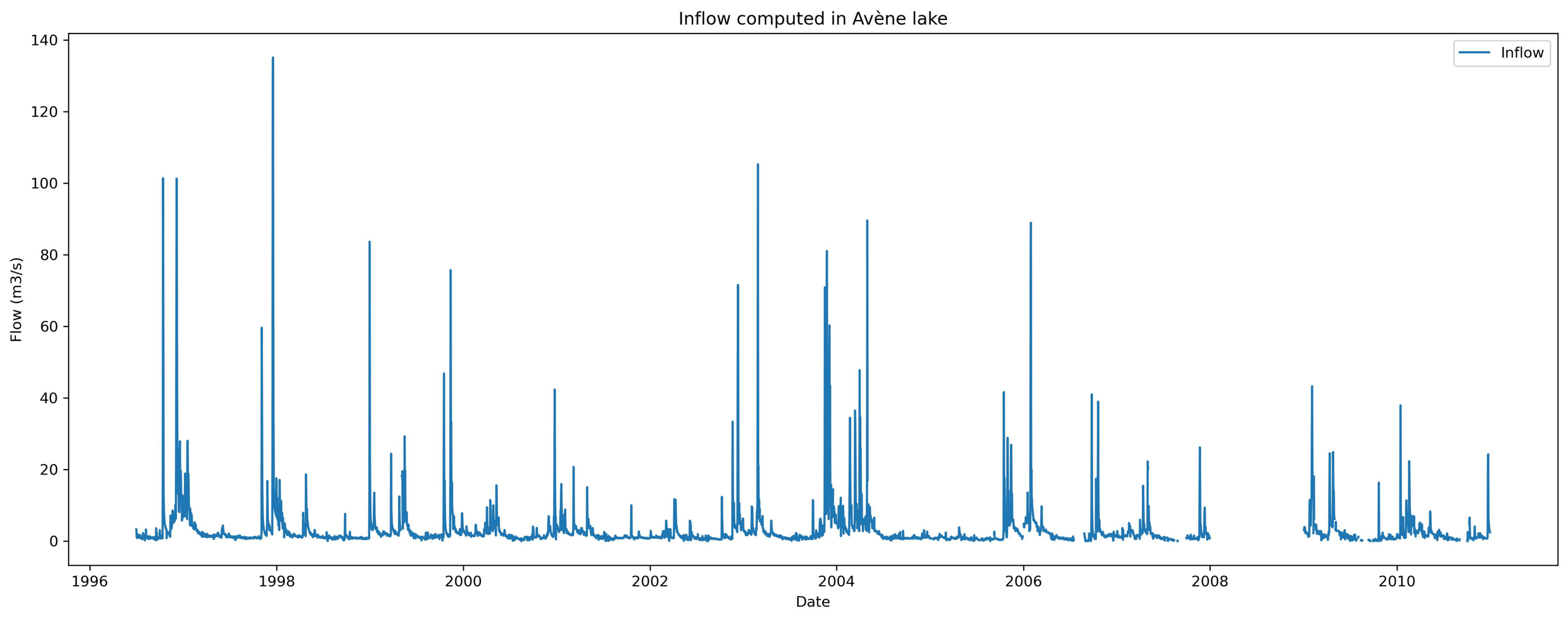
59	• L436: Is there any correlation between the 27 Cevenol episodes identified and the 22 extreme rainfall events? I have not seen any clear analysis on this point. Once again, such an analysis would be greatly enhanced if it focused on sediment yield (based on an estimate of the time series of fine sediment fluxes).	We agree that testing the correlation between the 27 instantaneous deposits and the 22 extreme rainfall events would be of great interest. We attempted such an analysis through a time-lag correlation and a Dynamic Time Warping (DTW) approach, but the age-model uncertainties led to a non-constant lag that propagated along the core, preventing robust correlation. Therefore, we could not quantify a reliable correlation. This led us to remain cautious regarding a one-to-one association between the extreme events detected in the sediment core and the extreme precipitation events, especially since the definition of extremes depends on the selected threshold and the sensitivity of the sediment core remains uncertain
60	• L446: It is somewhat challenging to discuss the absence of clear results	We agree with the reviewer that discussing the absence of clear correlations is indeed challenging. In our case, the lack of correlation between precipitation and hydropower production—although unexpected—became a result of interest in itself. It indicated that other factors were likely driving hydropower variability. Following the BRL operational reports, we hypothesized that dam management rules, summarized by the water-level setpoint curve, played a dominant role. This interpretation was confirmed by the strong correlations we found between hydropower production and deviations from the setpoint, especially in winter and spring during first period.
61	• L457: Well, you said there is no clear correlation…	We thank the reviewer for pointing out this error. The manuscript now states: L469: “In response to local authority requests, BRL lowered the maximum water level to 424.30 m_NGF. This led to a 38 % decrease in average hydropower generation, making obsolete prior correlations with water levels.”
62	• L465: “(r = 0.46),_likely”	L478 : "(r = 0.46), likely"
63	• References: In most of the reference, the journal name is missing…; when the paper cited is not in English, please indicate it (ex: L540: (in French))	We are grateful to the reviewer for the thorough revision and for highlighting the missing journal references, which were caused by an export format issue in our Zotero library, Moreover, when the cited paper is not in English, the suffix “(in French)” was added to the reference title.
64	• L540: text in capital…	L555: "BRL: Perspectives d’évolution de la gestion des volumes stockés dans le barrage des monts d’Orb (in French), Tech. rep., BRL, 2011."

ARSENIC

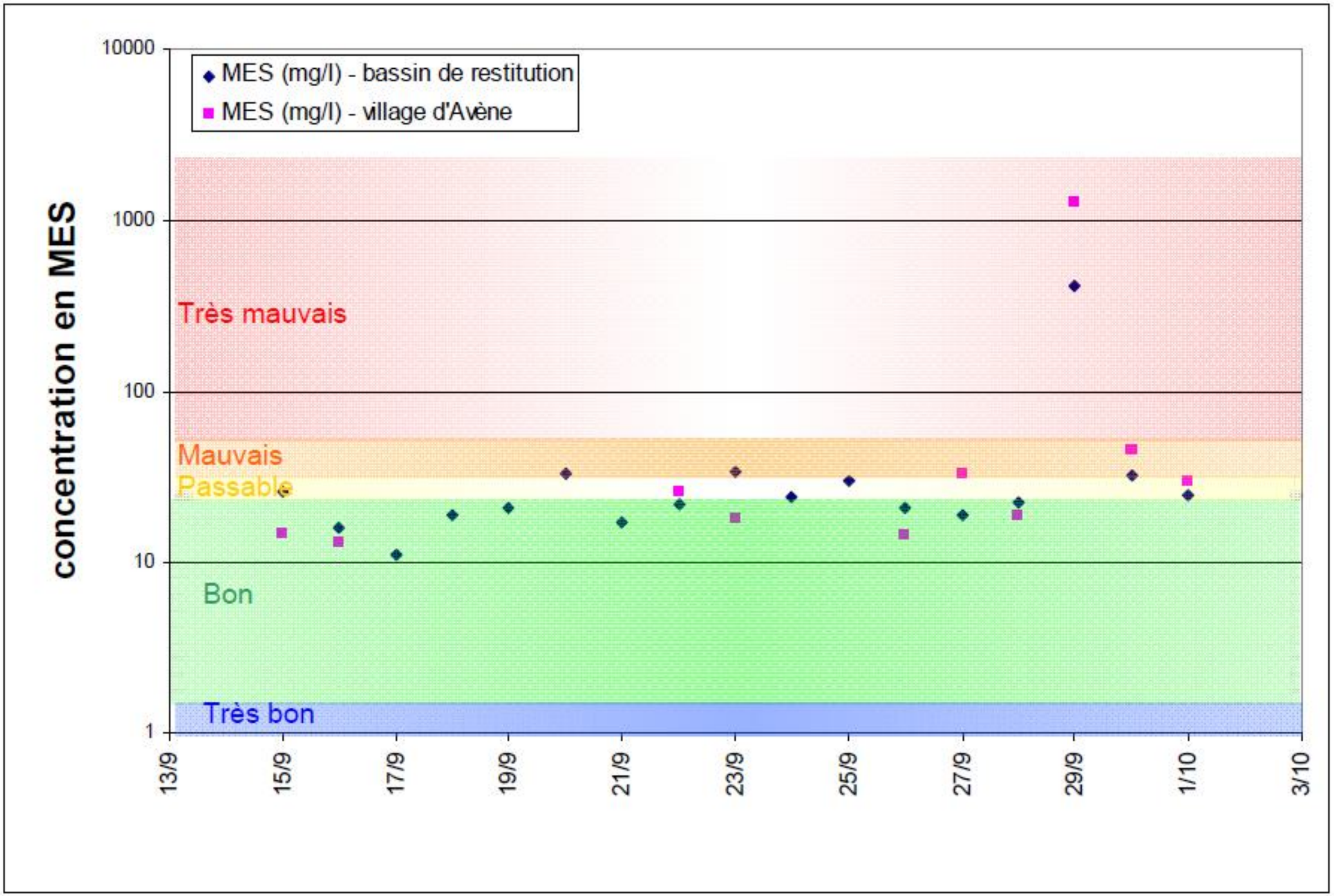


Le graphique ci avant présente les variations des concentrations en arsenic dans les eaux du bassin de restitution et dans l'Orb au droit d'Avène lors de la vidange de 2000.


Interpolated bathymetry
34,75
2,26
Coordinates
Sediment cores
Elevation
887
380


Inflow computed in Avène lake
Inflow
Flow (m3/s)
0
20
40
60
80
100
120
140
1996
1998
2000
2002
2004
2006
2008
2010
Date

MATIÈRES EN SUSPENSION



Le graphique ci avant présente les variations des concentrations en MES dans les eaux du bassin de restitution et dans l'Orb au droit d'Avène lors de la vidange de 2000 (échelle logarithmique sur l'axe des ordonnées).

Sediment fluxes estimation VS Cevenol episode detection