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Paper: “Signature géochimique des formations ferrifères rubanées et leur rôle dans la minéralisation aurifère de Zani-Koddo (Supergroupe de Kibali, RDC)”

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Corresponding Author: Serge Safari Madjabulu

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Peer review:

Reviewer 1: Laouali Idi Karimou
Abdou Moumouni University Niamey, Niger

Reviewer 2: Stevy Retonda-Kondja
Université des Sciences et Techniques de Masuku, Gabon

Reviewer 3: Malick Thiam
Cheikh Anta Diop University, Senegal

ESJ Manuscript Evaluation Form 2026

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Reviewer Name: Dr Laouali Idi Karimou	
University, Country: Abdou Moumouni University Niamey/Niger	
Date Manuscript Received: 20/05/2026	Date Review Report Submitted: 24/05/2026
Manuscript Title: Signature géochimique des formations ferrifères rubanées et leur rôle dans la minéralisation aurifère de Zani-Koddo (Supergroupe de Kibali, RDC)	
ESJ Manuscript Number: 0545/26	
You agree that your name is revealed to the author of the paper: Yes	
You approve, your name as a reviewer of this paper is available in the “review history” of the paper: Yes	
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Evaluation Criteria:

Please give each evaluation item a numeric rating on a 5-point scale, along with a thorough explanation for each point rating.

Questions	Rating Result [Poor] 1-5 [Excellent]
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1. The title is clear, and it is adequate for the content of the article.	5/5
<i>The title accurately reflects the study's focus, geographic setting, and geological context. It is concise, scientifically precise, and appropriately bilingual (French/English)</i>	
2. The abstract presents objectives, methods, and results.	5/5
<i>Both the French résumé and English abstract are well-structured. They clearly state the research objectives, analytical methodology (23 samples, ICP-MS/fire assay, PCA, correlation analysis, spatial interpolation), key findings (Au-Ag enrichment, hydrothermal control, dual mechanical/chemical role of BIF), and the main conclusion (BIF-hosted orogenic gold model).</i>	
3. There are a few grammatical errors and spelling mistakes in this article.	3/5
<i>While the scientific French is generally clear, the manuscript contains formatting artifacts (as noted in the text) and occasional syntactic inaccuracies. In accordance with ESJ policy, language editing is not mandatory but is highly recommended during the minor revision process.</i>	
4. The study methods are explained clearly.	4/5
<i>Methodology is detailed and largely reproducible. Sampling strategy, sample preparation, ICP-MS/fire assay protocols, normalization to Clarke values, PCA, correlation testing, and spatial mapping are appropriately described. However, the text slightly conflates TIN triangulation and kriging in the spatial interpolation section. Additionally, a sample size of $n=23$ is relatively modest for robust variogram modeling; acknowledging this limitation would strengthen methodological transparency.</i>	
5. The results are clear and do not contain errors.	4/5
<i>Results are logically presented and supported by raw/normalized data tables and statistical outputs. The interpretation of the Au-Fe weak correlation, PCA groupings, and inter-element correlations is geochemically sound. Minor issue: references to sub-figures (e.g., Figure 6C, 6D) are not explicitly described in the main text. Ensuring all figures are fully labeled and referenced would improve clarity.</i>	
6. The conclusions or summary are accurate and supported by the content.	5/5
<i>Conclusions directly follow from the geochemical and spatial data. The proposal of a “BIF-hosted orogenic gold deposit” model is well-justified by the Au-Ag-Fe association, structural control (NW-SE shear zones), hydrothermal fluid indicators, and the documented mechanical/chemical trapping role of BIFs. Recommendations for future isotopic, mineralogical, and geophysical studies are scientifically appropriate.</i>	
7. The references are comprehensive and appropriate.	4/5

The bibliography covers foundational and regional literature on orogenic gold systems, BIF-hosted mineralization, and the Kibali/Kilo-Moto district (e.g., Groves, Lavreau, Goldfarb, Allibone). Formatting shows minor inconsistencies (spacing, italics, journal abbreviation styles). Adding a few recent regional exploration or geochemical studies (post-2020) would further contextualize the work.

Overall Recommendation (mark an X with your recommendation) :

Accepted, no revision needed	
Accepted, minor revision needed	X
Return for major revision and resubmission	
Reject	

Comments and Suggestions to the Author(s):

This is a scientifically sound and well-structured study that addresses a relevant topic in Archean greenstone belt metallogeny. The integration of trace element geochemistry, multivariate statistics, and spatial interpolation provides a robust framework for characterizing BIF-hosted gold mineralization at Zani-Koddo. To prepare the manuscript for publication, please consider the following minor revisions:

1. Language & Formatting: Conduct a thorough proofreading pass to correct typographical artifacts (e.g., split words, inconsistent spacing, heading capitalization) and standardize figure/table references.
2. Methodological Clarification: Clearly distinguish between TIN interpolation and kriging in Section II.4. If kriging was used, briefly describe the variogram model chosen. Acknowledge that $n=23$ limits geostatistical robustness and frame spatial maps as exploratory rather than definitive.
3. Figure References: Ensure all referenced figures (especially Fig. 6C/D) are explicitly described in the text and properly labeled in the manuscript files.
4. Reference Formatting: Standardize citation style (journal names, italics, spacing) according to ESJ guidelines. Consider adding 2–3 recent regional studies on Kibali/Kilo-Moto exploration or BIF-hosted gold systems. These adjustments are straightforward and will significantly enhance the manuscript's readability and scientific rigor.

Comments and Suggestions to the Editors Only:

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Reviewer Name: Malick Thiam	
University, Country: Cheikh Anta Diop University, Senegal	
Date Manuscript Received: 21/05/2026	Date Review Report Submitted: 11/06/2026
Manuscript Title: Signature géochimique des formations ferrifères rubanées et leur rôle dans la minéralisation aurifère de Zani-Koddo (Supergroupe de Kibali, RDC)	
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Questions	Rating Result [Poor] 1-5 [Excellent]
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1. The title is clear, and it is adequate for the content of the article.	4,5
Rien à signaler	
2. The abstract presents objectives, methods, and results.	3,5
<i>(Please insert your comments)</i> Les auteurs devront préciser brièvement la méthodologie utilisée avant de présenter les résultats de l'étude.	
3. There are a few grammatical errors and spelling mistakes in this article.	4
Le document comporte quelques erreurs de syntaxes (voir corrections et suggestions)	
4. The study methods are explained clearly.	3,5
Rien à signaler	
5. The results are clear and do not contain errors.	3
- Unités du Tableau 1 : le fer est exprimé en « g/t » comme les éléments en traces, alors que ses teneurs (52 000–70 000) correspondent à ~5–7 % en poids. - Pour un élément majeur, l'unité attendue est le % (poids) ou le ppm. - Confirmer l'unité du Fe et harmoniser l'en-tête du Tableau 1. - Test de Student : le test apparié est décrit dans la méthodologie, mais ses résultats (t, p, seuil de significativité) ne sont rapportés nulle part dans les résultats. - Déplacer les interprétations vers la section discussion	
6. The conclusions or summary are accurate and supported by the content.	4,5
Rien à signaler	
7. The references are comprehensive and appropriate.	3,5
Les references sont comprehensives. Les auteurs gagneraient mieux à utiliser les references plus récentes. Quelques erreurs (voir corrections pour acceptation)	

Overall Recommendation (mark an X with your recommendation) :

Accepted, no revision needed	
Accepted, minor revision needed	X
Return for major revision and resubmission	
Reject	

Comments and Suggestions to the Author(s):

Voir les remarques détaillées sur l'article. Principales suggestions:

Résumé : préciser brièvement la méthodologie utilisée avant de présenter les résultats.

Langue : corriger les quelques erreurs de syntaxe relevées dans le texte.

Structure : déplacer les interprétations de la section Résultats vers la section Discussion.

Références : actualiser avec des références plus récentes et corriger les quelques erreurs signalées.

Comments and Suggestions to the Editors Only: