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Geochemistry (Geochronology)

Reply to 'Comment on *New U–Pb zircon ages from Tonga (Cameroon): coexisting Eburnean–Transamazonian (2.1 Ga) and Panafrican (0.6 Ga) imprints*' by Sadrack Félix Toteu and Joseph Penaye

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Toteu and Penaye [2] have recently questioned the validity of the isotopic analyses presented in Section 3 of Tanko Njiosseu et al. [1]. We agree that their comment reveals many problems. Nowadays, the original isotopic data obtained some years ago by one of us (J.-P. Nz.) in Göttingen have been lost, except for sample TG 24, the Pan-African synkinematic granitoid. In this latter case, the original data prove that the 618-Ma age was calculated using the Geodate v. 2.3 program (Table 1) from three zircon fractions only. Fractions corresponding to 100 and 80 μm (plotting respectively above and under the discordia) were excluded because of their higher errors (original data provided on request). Thus, the reported age for the synkinematic granitoid TG 24 in [1] can still be accepted, with the inherent limitations due to the small number of retained fractions. By contrast, we cannot argue about samples TG 5 and TG 10 of alleged Palaeoproterozoic age, because we cannot check the results reported in Ta-

Table 1
Data using the Geodate v. 2.3 program

Sample no.	$^{207}Pb/^{235}U$	*X* Wt	$^{206}Pb/^{238}U$	*Y* Wt	*R*	*X* error	*Y* error	Includes
54	0.786590	0.005827	0.094175	0.000161	0.402	−0.002346	−0.000012	Y
57	0.795080	0.002718	0.095223	0.000152	0.520	−0.002075	−0.000008	Y
58	0.728970	0.002862	0.087646	0.000294	0.867	0.001038	0.000005	Y
555	0.816610	0.005905	0.095150	0.000553	0.823	−0.026641	−0.000300	N
56	0.723080	0.004149	0.090714	0.000169	0.422	0.033540	0.000132	N

Sample uncertainties are 1σ and based on 60 replicates. Regression converged after 21 iterations. Centroid $^{207}Pb/^{235}U = 0.0748926$; $^{206}Pb/^{238}U = 0.089930$. Slope = 0.1200682 ± 0.0049975 1σ. Intercept = 0.000000 ± 0.003746 1σ. SWD = 1.404 on 3 points. Critical $F = 4.00$. Upper age = 617.94 + 29.63 − 15.18 95% conf. Lower age = 0.14 + 198.18 − 204.36 95% conf. Decay constants: $^{238}U = 1.55125 \times 10^{-10}$; $^{235}U = 9.84850 \times 10^{-10}$. Line constrained to pass through point $X = 0.0000$, $Y = 0.0000$ near age = 0.00 Ma.

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ble 2 of [1]. Thus, we prefer to dismiss the two relevant ages reported in [1] and conclude that the Eburnean–Amazonian event remains to be precisely dated in Tonga area.

Regarding the other results presented in Tanko Njiosseu et al. [1], the structural and petrological data (Sections 1 and 2) were not questioned by [2] and remain of interest for the understanding of the geology of central Cameroon.

References

[1] E.L. Tanko Njiosseu, J.P. Nzenti, T. Njanko, B. Kapajika, A. Nédélec, New U–Pb zircon ages from Tonga (Cameroon): coexisting Eburnean–Transamazonian (2.1 Ga) and Pan-African (0.6 Ga) imprints, C. R. Geoscience 337 (2005) 45–73.

[2] S.F. Toteu, J. Penaye, Comment on *New U–Pb zircon ages from Tonga (Cameroon): coexisting Eburnean–Transamazonian (2.1 Ga) and Pan-African (0.6 Ga) imprints*, by E.L. Tanko Njiosseu et al., C. R. Geoscience 337 (2005).