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The reconstruction of Ellsworth-Whitmore Terrane and Malvinas (Falkland) Islands: new approach using stratigraphic and geochronological data.

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Early Paleozoic Gondwanaland reconstruction studies suggested that the Malvinas (Falkland) Islands and Ellsworth-Whitmore terrane were located, during the initial fragmentation of Gondwana, adjacent to southern Africa [1]. This fact implies that during the Mesozoic times, prior to Atlantic opening, Malvinas (Falkland) Island translated and rotated clockwise; whilst, almost simultaneously, the Ellsworth-Whitmore terrane had a counterclockwise rotation in order to accommodate paleomagnetic and stratigraphic correlation data.

On the other hand, several cohesive studies were made correlating W and E Cape [2], as well as Sierra de La Ventana-Cape Fold belt [3, 4], and Paraná-Karoo Basin [5], showing that these terranes shared characteristics that restrain them to a common geological history. Stratigraphic correlation between the Malvinas (Falkland) Island and Ellsworth-Whitmore Terrane, which is based on unprecise sedimentological and stratigraphic criteria with Eastern Cape Fold Belt.

When published dataset is integrated with recent observations made by Ramos [2] and Elliot et al. [6], the Malvinas (Falkland) Islands and Ellsworth-Whitmore terrane immediately lose their link with the eastern portion of African continent; however, a new bond between them is enlightened, suggested by sedimentological and detrital zircon analysis, among others, resulting a new approach. As a result, it makes plausible that the Malvinas (Falkland) Island [2] and Ellsworth-Whitmore crustal block, during Paleozoic and Mesozoic, were part of the continental platform of southern South America and not connected to the Eastern Africa segment as previously accepted [e.g. 1 and therein references].

References:

[1] Dalziel, I.W.D. et al (2013). *Annu. Rev. Earth. Planet. Sci.* 41:767-793

1 Ramos V.A. (2008). *J. South Am. Earth Sci.* 26:235-251.

2 Du Toit A.L. (1937) *Our wandering continents*. London, Oliver and Boyd, 366 p.

[5] Milani, E. J. and De Wit, M.J. (2008). *Geol. Soc. Spec. Pub.* 294:319-342

[6] Elliot, D.H. et al (2016). *Gondwana Res.* 29(1):234-247

