

## **Potential Oil Reservoirs Along the Central Atlantic and Western Alpine Tethys Margins Documented by the Post-Rift Exhumation of Their Hinterlands**

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Recent results from low-temperature thermochronology study (apatite fission-track and (U-Th)/He analyses) realized in NW Africa provided evidence of an unexpected regional exhumation from Late Jurassic to Early Cretaceous times.

AFT and (U-Th) /He cooling ages obtained from the NW Africa basement rocks correlate with AFT and (U-Th) /He data determined at various locations of the Central Atlantic and Western Tethys margins all revealing a strong cluster of Late Jurassic-Early Cretaceous apparent ages. (Miller and Duddy, 1989; Andriessen and Zeck, 1996; Johnson, 1997; Stapel, 1999; de Bruijne and Andriessen, 2000; Roden-Tice et al., 2000; de Bruijne, 2001; Juez-Larré and Andriessen, 2002; Roden-Tice and Wintsch, 2002; Lorencak et al., 2004; Roden-Tice and Tice, 2005; Barbero and López-Garrido, 2006; Juez-Larré and Ter Voorde, 2009).

Evidence of such Late Jurassic-Early Cretaceous exhumations is also supported by a widespread deposition of lower Cretaceous detritic sediments observed in Central Atlantic conjugate basins from Florida-Guinea in the south to New Scotia-Layoune-Seine basins in the north, representing important oil and gas reservoirs.

The new insight provided by low-temperature thermochronology combined with the number of exciting new significant oil and gas discoveries (partly contained in lower Cretaceous detritic sediments) made during these last decades confirm the importance of the post-rift event for the formations of the conjugate basins along the Central Atlantic margins and further east, in the Western Alpine Tethys margins. It seems therefore that the discovery of the post-rift exhumation of the Central Atlantic passive margins is a key element in the perspective to predict the potential reservoir zones for future oil explorations.