Siliceous karst development in the Fontainebleau Sandstone (France)

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Abstract

The flat lying Fontainebleau sandstone tables, embedded in uncemented sand, display numerous siliceous karst morphologies such as vertical and horizontal pipes, karren morphologies, etc., completed with a 10 to 20 m thick weathering profile of bleached sand. These morphologies result from progressive dissolution of the sandstone quartz cement along water-seeping pathways. Dissolution alters the sandstone to loose sand that fills the dissolution features. At the walls of the dissolution structures, a friable centimetric-thick sandstone rim develops within which the overgrowths are only partly dissolved. In some places, the dissolution pipes are lined with secondary silica deposits. Somewhere, the outcrops of this friable sandstone are the sites of pre-historical carvings.

Key words

Sandstone, dissolution, weathering, morphology, Paris Basin, France.