RECORD OF A STHATERIAN RIFT-SAG BASIN IN THE CENTRAL ESPINHAÇO RANGE: FACIES CHARACTERIZATION AND GEOCHRONOLOGY

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Several rift-related sequences and volcanic-plutonic associations of Statherian age occur within the São Francisco paleocontinent. One succession within the sedimentary record, the Terra Vermelha Group, defines one of the evolutionary stages of the Espinhaço basin in the Central Espinhaço Range. As a result of stratigraphic analyses and supported by U-Pb zircon geochronological data, the evolution of this unit has been characterized. To more effectively delimit its upper depositional interval, the sequence of this unit, which is represented by the Pau d'Arco Formation, was also studied. The sedimentary signature of the Terra Vermelha Group suggests the infilling of an intracontinental rift associated with alluvial fans as well as lacustrine and aeolian environments with associated volcanism. The basal succession represented by the Cavoada do Buraco Formation mainly consists of conglomerates with interlayered sandstones and subordinate banded iron formations. Detrital zircons obtained from this unit reveal ages of 1710 ± 21 Ma. The upper succession, represented by the Espigão Formation, records aeolian sandstones with volcanic activity at the top. A volcanic rock dated at 1758 ± 4 Ma was interpreted as the timing of volcanism in this basin. The aeolian deposits recorded within the Pau d'Arco Formation were caused by a renewal of the sequence, which represent a stage of post-rift thermal subsidence. The maximum age of sedimentation for this unit was 1675 ± 22 Ma. The basin-infill patterns and Sthaterian ages suggest a direct link with the first rifting event within the São Francisco block, which was responsible for the deposition of the Espinhaço Supergroup. The authors acknowledge Geological Survey of Brazil (CPRM) for the financial support.