

GLACIAL SEDIMENTATION AND CICLICITY IN THE RIO DO SUL FORMATION (EARLY PERMIAN), SOUTHEASTERN PARANÁ BASIN, BRASIL.

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The Rio do Sul Formation, the uppermost division of the Itararé Group, has a 320m-thick depocenter in eastern Santa Catarina. Outcrop and subsurface data allow to build a 3-D framework and to reconstruct the paleogeographic evolution of that unit (Rio do Sul Formation). Eight facies associations are identified: marine shale, varvite, thin-bedded turbidite, thick-bedded turbidite, marine diamictite, fining-upward sandstone to diamictite (retrograding deglaciation succession), coarsening-upward shale to sandstone (prograding deltaic succession), and interbedded sandstone and shale (tempestite). Three transgressive-regressive cycles are recognized in the Rio do Sul Formation: each one is formed by coarsening-and shallowing-upwards succession of shale (or varvite), diamictite and sandstone. The top of the formation is a transgressive tempestite deposit that overlies the third cycle. The lower cycle is formed by a basal transgressive unit (Lontras Shale and varvite) overlain by thick diamictite and by sandy turbidite; the latter attains 80m in the Rio do Sul depocenter. At the basin margin the transgressive component is a deglaciation succession which onlaps a glacially-striated basement. The intermediate cycle begins with thin-bedded, sandy-shale turbidite; it follows a thick diamictite and a deglaciation succession (sandstone to diamictite). The upper cycle has a marine shelf shale at the base, followed by a deltaic succession (basin center); at the basin margins the cycle is composed of a marine-deltaic succession, a thick diamictite and a deglaciation succession. After the renewed transgressive episode which ends the Rio do Sul deposition, it follows the 120m-(depocenter) to 40m-thick (basin margin) deltaic system of the Triunfo Member, Rio Bonito Formation.