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DEPOSITIONAL ANALYSIS OF A BOULDER-RICH DIAMICTITE, WITMARSUM, PARANÁ STATE, BRAZIL

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Diamictites of the Carboniferous Itararé Subgroup were deposited during the advance and retreat cycles of the Paraná lobes of the Gondwanan Ice Sheet over the Devonian Furnas Formation, a quartz rich sandstone unit. In the Witmarsum area, Paraná State, Brazil there are a number of exposures where the glaciogenic sediments of the Itararé Subgroup overly glacially striated Furnace Formation suggesting a terrestrial environment for deposition. A recent exposure revealed a diamictite, not previously described, that consists of clasts ranging in size from several centimeters to approximately one meter in diameter with an interclast matrix of homogeneous clayey diamictite. The goal of this study is to determine the depositional environment of the diamictite and the origin and provenance of the large boulders within the diamictite.

Grain size analysis of the matrix's composition, roundness, and sphericity was conducted on the one phi grain size fraction. These analyses have also been conducted at a similar correlative outcrop approximately 4 meters away to compare conclusions. Adobe Illustrator was used to trace clasts and a clast size ratio of 3:2 was used for apparent orientation analysis. Apparent orientation and sediment analysis will help determine the depositional environment of the diamictites of Witmarsum.

Matrix samples were quartz dominated indicating that the Furnas Formation was incorporated into much of the diamictite. Roundness and sphericity were similar indicating no changes in provenance. A near-horizontal clast orientation is apparent, suggesting that the diamictite was deposited as a debris flow in a subaqueous environment.

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Session No. 229--Booth# 421

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