

CATASTROPHIC FLOODING AS A POSSIBLE CAUSE TO COAL ACCUMULATION, PARANÁ BASIN, SOUTHERN BRAZIL

Begossi, R. and Della Fávera, J.C.UERJ, Faculdade de Geologia, Rio de Janeiro, Brazil

Southern Brazilian coal presents a high-ash content, averaging 50%, that would classify it like a coaly silty shale rather than a true coal. This fact implies in reworking of the organic matter, which is reinforced by the occurrence of the hummocky cross-stratification in coal. This coal is associated to siliciclastic deposits of deltaic settings (braid deltas), being normally the distal facies. In some localities in Rio Grande do Sul coal is closely related to diamictites and their by-products, probably from a glacial origin. The idea of catastrophic flooding affecting the geological record was recently retaken by Mutti et al. (1996), who considered the hummocky cross-stratification as a clue to this sedimentary process rather than the classical storm-wave origin. Other evidences of such catastrophic process in this setting would be the splitting of coal beds in the coarse-siliciclastic facies, and the association of fresh-water flora (algae) to salt-water elements, indicated by the high-pyrite content. Otherwise, siliciclastic sediments involving coal present also the hummocky cross-stratification. The proposed setting for coal is a delta dominated by catastrophic floods in which the organic matter would be primarily accumulated (vegetation plucked by floods), or would be the reworking of previous peat, both deposited in the prodelta.