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# Comparative diagenesis at three site on the Canadian continental margin

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Diagenesis of carbon, oxygen, nitrogen, and manganese at three sites on the Canadian continental margin is quantitatively compared and contrasted using results from a computer code (CANDI) published by Boudreau (1996a).The data at Station 3 (Cabot Strait) are well explained by the steady state output from CANDI, assuming a porewater balance created by diffusion and reaction only, whereas the data from Stations 4 (Emerald Basin-Scotia Shelf) and 5 (Scotia Slope) are not consistent, in one way or another, with this simple model. The deviations between model and data at Station 4 are best explained by nonsteady-state diagenesis. Model. fits to the Station 5 S CO2 observations are improved dramatically by adding some irrigation at this site, but the S NH3 distributionappears to be subject to an additional anomalous transport to the O2 zone and subsequent oxidation to NO3 2 . The mechanism for this latter phenomena is unknown and in need of future research. In addition, the O2 and