



Late Quaternary glacially influenced sedimentation on the north-west Irish margin: facies, sediment delivery and link to glacial history

Sara Benetti (1), Fabio Sacchetti (1), Aggeliki Georgiopoulou (2), Colm Ó Cofaigh (3), Robin Edwards (4), Lee Toms (5), and Steve McCarron (6)

(1) School of Environmental Sciences, University of Ulster, Coleraine, United Kingdom (s.benetti@ulster.ac.uk), (2) UCD School of Geological Sciences, University College Dublin, Dublin, Ireland, (3) Department of Geography, Durham University, Durham, United Kingdom, (4) School of Natural Science, Trinity College Dublin, Ireland, (5) PetroStrat Ltd., Tan-y-Graig, Parc Caer Seion, Conwy, Wales, United Kingdom, (6) Department of Geography, National University of Ireland, Maynooth, Ireland

This presentation will discuss the sedimentary processes that took place since the last glaciation on the north-eastern margin of the Rockall Trough, offshore Ireland. With the use of seventeen sediment cores collected along the axes of two major canyons and across the northern Rockall Trough, changes in sedimentary processes from shelf edge to basin floor are revealed and examined. The aim is to better understand the sedimentary processes that occurred along the canyons and in the trough during the last glaciation, through the deglaciation and into the Holocene.

On the basis of sedimentary structures, texture, grain size, X-radiograph character and physical properties thirteen depositional facies are recognised. These facies are interpreted in terms of depositional processes as: (1) Massive diamicton deposited as subglacial till on the continental shelf during the last glacial advance; (2) Fining upward gravels and sands, related to rise in sea level and changing of hydrographic conditions on the shelf over time; (3) Plumites deposited during deglaciation on the upper slope; (4) Widespread hemipelagites of Holocene and glacial age; (5) Heavily bioturbated, foraminiferal rich contourites of Holocene and glacial age; (6) coarse- and fine-grained turbidites deposited mainly on the lower slope and trough during the last glacial period; (7) diamicton and chaotic mud beds deposited in the trough by glaciogenic debris flows.

Margin physiography, distance from the ice sheet grounding zone, style of glaciation on the shelf and strength of deep sea circulation are the main controlling factors for these depositional processes.