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Agglutinated Foraminifera indicate a deep bottom current over the Hovgaard Ridge, West of Spitsbergen

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The Hovgård Ridge is situated in Fram Strait, west of Spitsbergen. The ridge either represents a submerged fragment of continental crust or an upwarped fragmant of ocean crust within the Fram Strait. Its crest rises to a water depth of approx. 1170 m. During Expedition 87 of the Icebreaker POLARSTERN in August 2014, a sediment-echosounding profile was recorded and a boxcore station was collected from the crest of Hovgård Ridge at 1169 m water depth. The surficial sediment at this station consists of dark yellowish brown pebbly-sandy mud with a minor admixture of biogenic components in the coarse fraction. Patches of large tubular foraminifera and isolated pebbles were clearly visible on the sediment surface. The sediment surface of the boxcore was covered with patches of large (>1 mm diameter) large tubular astrorhizids belonging mostly to the species Astrorhiza crassatina Brady, with smaller numbers of Saccorhiza, Hyperammina, and Psammosiphonella. Non-tubular species consist mainly of opportunistic forms such as Psammosphaera and Reophax. The presence of large suspension-feeding tubular genera as well as opportunistic forms, as well as sediment winnowing, point to the presence of a deep current at this locality that is strong enough to disturb the benthic fauna. This is confirmed by data obtained from sediment echosounding, which exhibit lateral variation of relative sedimentation rates within the Pleistocene sedimentary drape covering the ridge indicative of winnowing in a south-easterly direction.