



Deformation styles and sedimentology criteria to distinguish between subglacial, glaciotectionic and glaciomarine sedimentation of glacial Lake Agassiz

Afsoon Kazerouni,
Bemidji State University, USA

Abstract:

Glaciolacustrine sediments accumulated in vast lake systems of central and eastern North America. The central region included glacial Lake Agassiz, one of the largest fresh-water lakes that ever existed. Lake Agassiz covered during different phases most of Manitoba, and parts of Saskatchewan, Ontario, North and South Dakota, and Minnesota.

Overflow from Lake Agassiz and other large proglacial lakes cut spectacular spillway channels across the northern Great Plains. The southern part of the Lake Agassiz basin contains a complex of sediments that reflects the first 2000yr of the lake's history.

This research compares and contrasts the sedimentology and structural geology of a Glaciolacustrine sediments site (glacial Lake Agassiz). Primary studies suggest that the glaciomarine environment is dominated by sedimentary processes, related to sediment supply, water content and distance from the glacier margin. Glaciotectionic deformation, however, is dominated by deformational processes, related to effective pressure, shear strain, nature of the subglacial material and distance from the glacier margin. From this study a series of criteria will be suggested to distinguish both Quaternary and contemporary glaciotectionic and glaciomarine environments. In addition, the investigation also discusses the subsequent effects of glaciotectionic deformation on a primary glaciomarine site due to a glacial readvance.

Biography:

Afsoon Kazerouni is affiliated to Geology Department at the Center for Sustainability Studies. She received her PhD in Geology from Aarhus University in Denmark (Re-



search title: Petrography and diagenesis of Palaeocene-Eocene sandstones in the Siri Canyon, Danish North Sea). She has carried out post-doctorate fellowships at Texas Tech University (USA), Palacký University (Czech Republic), and Geological Survey of Denmark and Greenland (GEUS). She worked as a faculty member, Instructor and supervisor at Rhodes university (South Africa).

Publication of speakers:

1. RikkeWeibel, HenrikFriis, Afsoon Moatari Kazerouni et al: Development of early diagenetic silica and quartz morphologies – Examples from the Siri Canyon, Danish North Sea. 10.1016/j.sedgeo.2010.04.008.
2. Afsoon m. Kazerouni, johan b. Svendsen, mette l. K. Poulsen et al : Illite/smectite transformation in detrital glaucony during burial diagenesis of sandstone: A study from Siri Canyon – Danish North Sea. September 2012: 10.1111/j.1365-3091.2012.01356.x.
3. Afsoon MoatariKazerouni, Henrik Friis, Johan Byskov Svendsen, RikkeWeibel et al : Heavy mineral sorting in downwards injected Palaeocene sandstone, Siri Canyon, Danish North Sea. 10.1016/j.sedgeo.2011.01.013
4. Kazerouni, Afsoon. Gis-application for environmental management in mining areas on the example of the molteno coal field, indwe, eastern cape: 10.5593/sgem2017/23

Webinar On Earth & Planetary Science | July 22, 2020 | Toronto, Canada

Citation: Afsoon Kazerouni; Deformation styles and sedimentology criteria to distinguish between subglacial, glaciotectionic and glaciomarine sedimentation of glacial Lake Agassiz; Geology 2020; July 22, 2020; Toronto, Canada