**Stratigraphic section of the seismic data collected in the north Beaufort sea**

**Introduction**

The Beaufort Sea is well known for the abundance of permafrost that are located as much onshore as offshore. As summarized in Grantz et al. (2011), the development of the Canada basin started with a rifting phase during the Cretaceous witch was follow by a phase of flooding by the south into the Mackenzie basin. During the beginning of the Eocene, tectonism in the region caused unconformity and sequence-bounded from the Mackenzie River. After that, West-East compression caused folding and thrusting in the Beaufort bed in the Mackenzie Valley region. A late Miocene unconformity is overlain by a thick, prograding sequence of Plio-Pleistocene muds including deltaic bodies, shelf-edge facies and abundant mass failure. The stratigraphic units defined by Dixon et al. (1994) and Graves et al. (2010) include the Kugmallit Formation associated with the most recent pull-apart, the thick Mackenzie Bay (over the Miocene unconformity), followed by the equally thick Akpak Formation, and a Pliocene shelf-top wedge with thick and multiple-failed slope equivalents termed the Iperk Formation (Kang et al. 2017). However, those last formation has been partially eroded by the glacier has a deep evaluated at 300 meters. That erosion is located in the Mackenzie Trough which was filled afterward (Batchelor et al. 2013). This unique geological artic formation was found some years ago and showed the connected permafrost in that region. Due to a lack of information and different challenges, this region was not study in the past until now. These studies have been done recently with the Geological Survey of Canada (Jin et al. 2017) to understand the offshore permafrost distribution in the Beaufort Sea especially in the Mackenzie Trough and the Yukon coast.