Report on Expert Team on Physical Processes: Initial contact made but, very little response. Discussion interrupted by the field season.

1. Shelf-break exchange processes: A focus on Pacific-origin water.

- Expeditions aboard the *Araon*, *Mirai*, *Louis*, *Healy* cover the Chukchi, Northwind Ridge and Beaufort Gyre, and span the shelfbreak from the Chukchi to Amundsen Gulf thus give unprecedented coverage of the flow of Pacific Water.

- The path of Pacific-origin water appears to have shifted westward since 2007 in response to wind and ice motion: less flows eastward along the Alaskan Beaufort upper slope and more flows directly across the Chukchi shelfbreak to the Northwind Ridge and Chukchi Abyssal Plain (e.g. Koji Shimada (data), Paul Myers (modelling)).

- Coordinated shelfbreak sampling?

- Discussion on processes involved?

2. Sea-ice processes: Need to know the relative importance of the various processes that contribute to sea-ice melt and formation, especially so in the Pacific Arctic Region where the summer ice retreat has increased so dramatically.

- Standardize sea ice, meteorological and upper ocean observations from the research vessels in the Pacific Arctic Region?

[eg Louis:
ICE: Underway: Ice thickness (e/m and measured), PMR (Passive Microwave Radiometer), forward-looking cameras.
OCEAN: CTD, XCTD, UCTD, TSG, turbulence (but near surface problematic for measurements from large icebreakers)
ATMOSPHERE: IR and Visible all-sky cameras, downward SW, LW and UV, upward and downward radiance for albedo (bow mounted)]

- Additions of meteorologists and sea-ice scientists? [eg Louis: Kazu Tateyama, Jenny Hutchings, Jens Ehn, Dave Barber]