Session: B1

The predictability of Arctic iea Ice

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The recent sharp decline in Arctic sea ice, particularly during summer months, and the potential for expanding human activity in the Arctic has prompted an interest in predicting Arctic sea ice. In past years, none of the forecasts provided to the Sea Ice Outlook project have used fully coupled atmosphere-sea ice-ocean models. We evaluate the Arctic sea ice predictability in the Community Climate System Model Version 4. We find northern hemisphere sea ice area is predictabile for about 1-2 years, but the location of greatest persistence varies seasonally. Predictability is generally greater in summer months, when the sea ice area is strongly coupled to the ice thickness. In contrast, in winter the rate of ice expansion depends little on thickness. The thickness anomalies are generally more persistent (3-4 years) and are strongly influenced by greenhouse warming (within about 3 years).