

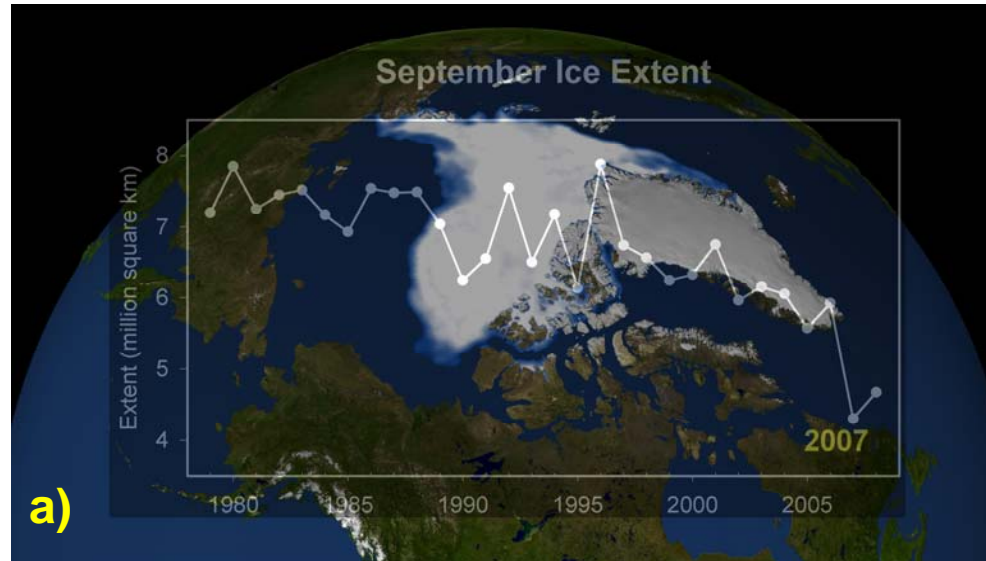
Sea Ice Outlook:

Use Dipole Anomaly (DA) index to predict Arctic summer ice minima

PI: Jia Wang; and Xuezhi Bai, NOAA GLERL

- DA is defined as the second SLP mode in the Arctic; the first mode is Arctic Oscillation (AO)
- Using winter-spring mean DA index and summer DA index, we have proven ice minima in 1995, 1999, 2002, 2005, 2007, and 2008
- Using 2009 winter-spring (+0.61) and summer (+1.06) DA indices, now we can project that 2009 summer ice will reach another minimum, or at least stay similar to 2008 level
- Reference: Wang et al. 2009, GRL, “Is the Dipole Anomaly a major driver to record lows in Arctic summer sea ice extent?”
- Collaborators: IARC/UAF, UW. Hokkaido Univ.

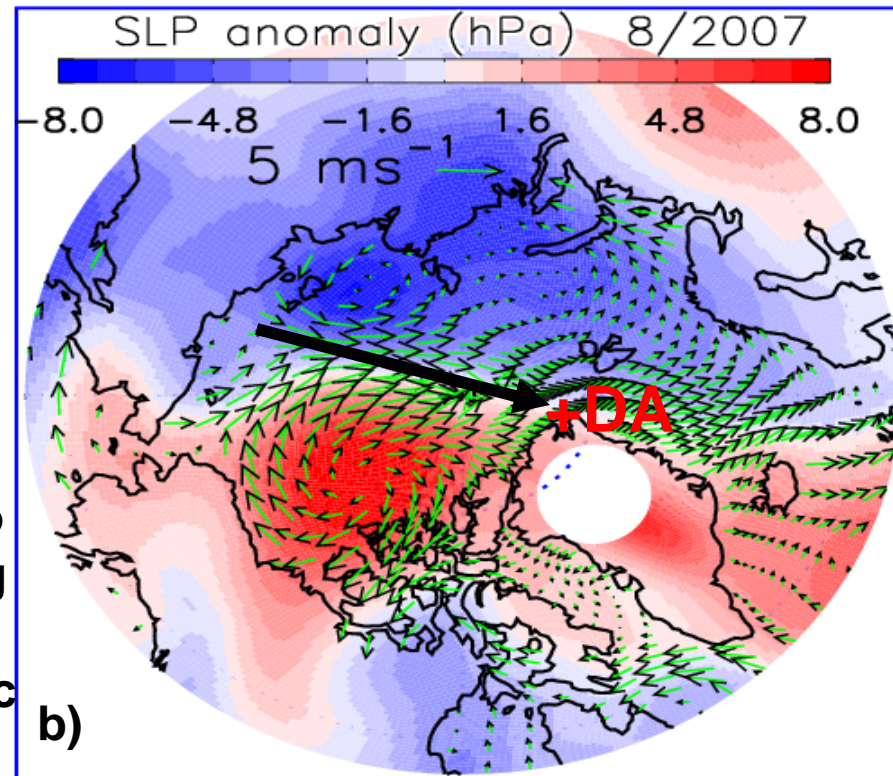
**Record low
Summer ice
extent on Sep.
24, 2007 and
time series of
September ice
area**



Record lows:
1995,
1999,
2002,
2005,
2007,
2008 (not
record low,
but 2nd lowest
ever!)

**Sea-level pressure
anomaly (in color:
Red/blue, high
pressure) and wind
anomaly, relative to
long-term mean.**

**Black arrow: max
wind anomaly due to
positive DA, flushing
sea ice out of Arctic
into northern Atlantic**



DA predicts record lows: 1995, 2002, 2007, and 2008 (+DA persists from Win-Spr-Sum); 1999 and 2005 (-DA in Win-Spr, but +DA in summer). So, summer DA is the key! The 2009 (red cross X) DA indices indicates an sea ice minimum will occur in September 2009 at a magnitude of at least the 2008 ice cover!

