

# Climate Change: Clouds, Circulation and Climate

The sensitivity of the climate to increasing greenhouse gases is largely determined by radiative feedbacks that act to amplify the initial CO<sub>2</sub> forcing. Interactions between clouds and the circulation remain one of the most uncertain processes in projections of future climate change. The goals of this research are to: 1) Diagnose the response of clouds and the circulation to increased CO<sub>2</sub> using global climate models from the Intergovernmental Panel on Climate Change (IPCC) 6<sup>th</sup> Assessment Report (AR6); 2) Compare the model-simulated changes with those inferred from observations using the NASA “A-Train” constellation of climate monitoring satellites. The climate model simulations will be used to assess the relationship between observable changes in climate over the satellite-period of record with model projections of future change during the 21<sup>st</sup> Century. These results will then be used to better constrain model future projections of climate change.

