



## **The PRISM data/model co-operative: current modelling activities, future plans and data requirements**

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Here we review current activities and future model and data requirements associated with the palaeoclimate modelling arm of the PRISM data/model co-operative. The talk will begin with a description of modelling focussed on understanding the behaviour of climate phenomena that are responsible for generating significant regional decadal and sub-decadal climate variability (ENSO and NAO), and the challenges associated with linking such predictions to mid-Piacenzian palaeoenvironmental data. Secondly, we will examine current efforts to understand the role of changing sea-surface temperatures, in relation to other important boundary conditions, in driving global and regional climate/environmental shifts recognised in the proxy data. Thirdly, we will examine initial results from coupled climate and ice sheet modelling examining the response of the Greenland and East Antarctic Ice Sheets to orbital variations and how these predicted changes relate to current estimates of mid-Piacenzian mean sea level and sea level variability. Our future plans centre on (a) the development of the Pliocene Model Intercomparison Project, (b) understanding uncertainty in climate model predictions of mid-Piacenzian climates and (c) moving towards an Earth System Modelling framework for the PRISM interval. With the 4th iteration of the PRISM palaeoenvironmental data set under construction we briefly outline how the demands of modern climate and earth system models will partly shape PRISM4, as well as the new scientific opportunities that will stem from it (e.g. the advent of isotope enabled models, higher resolution boundary conditions, river routing schemes and palaeobathymetry).