Title: The Simple Cloud-Resolving E3SM Atmosphere Model

One of E3SM’s biggest goals right now is the development of a global cloud resolving model. This model (called SCREAM) will be written in C++/Kokkos in order to run end-to-end on GPUs. The combination of very fine spatial resolution and GPU capability will allow SCREAM to make good use of emerging exascale architectures. SCREAM is being developed in 2 overlapping phases. The first phase (called SCREAMv0) implements process representations appropriate for cloud-resolving scales using the existing E3SM framework, then uses the resulting Fortran model to provide an initial glimpse at model climate and to serve as a template for C++ porting. The second phase (SCREAMv1) provides the GPU-ready C++ code. The SCREAMv0 model is complete and is being tested for its first production run – a 40 day simulation with prescribed SST which will be submitted to the DYAMOND2 intercomparison project. The SCREAMv1 model is about half completed, with additional progress made daily. The goal of this talk will be to provide details about the SCREAM model, its status, and upcoming plans.