Séminaire
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Optical properties of snow simulated with physically based snow albedo model (and satellite remote sensing of snow physical parameters)

Résumé:

Snow albedo strongly depends on snow grain size and impurity concentrations. The detailed spectral albedo and bidirectional reflection properties can be simulated with a radiative transfer model for the atmosphere-snow system. Based on this model a physically based snow albedo model (PBSAM) was developed for mainly the use in GCM. Using the PBSAM with the radiation and snow pit data measured in Sapporo, Japan and the SIGMA-A site in Greenland, the effects of snow grain size and impurities on optical properties of snow were investigated. I will discuss on the results for broadband albedo variation, solar heating profile, radiative forcing due to snow impurities as well as the validation of PBSAM. If my presentation time allows, satellite remote sensing of the same snow physical parameters in Greenland retrieved from MODIS data will also be presented.