SubTask Descriptions for the IEBA Slides

## Task 4.2 Details:

* Sub-task 1:
  + Review models and model parameters used to estimate water balance components to estimate/simulate infiltration and runoff
* Sub-task 2:
  + Design methodology to estimate evapotranspiration using remote sensing measurements and modeled vegetation parameters such as leaf area index, root depth, and root mass
  + Correlate ET term with remote sensing measurements and modeled vegetation parameters
  + Develop algorithms to estimate root depth from remotely sensed measurements and modeled vegetation parameters
* Sub-task 3:
  + Develop methodology to estimate evapotranspiration at high latitudes using vegetation indicators
    - Literature review on permafrost active layer hydrologic succession
    - Permafrost active layer vegetation root depth succession-ET lab experiments
    - Permafrost active layer vegetation root depth succession-ET field measurements
* Sub-task 4:
  + Develop a process-informed stochastic hydrologic-vegetation model
    - Develop a machine learning (ML) methodology to derive the parameters for a stochastically based hydrologic model using a high-resolution hydrologic model (GSSHA) and remotely sensed data
    - Develop ML methodology to use Budyko (1974) relationships to derive vegetation parameters, and relate these to measurements to local climate conditions and trends
    - Develop and test the hydrologic-vegetation model using a case study
* Sub-task 5
  + Data and model analysis
* Sub-task 6
  + Journal papers/technical report