

**(1) AVIM2 – Atmosphere-Vegetation Interaction Model (version 2)**

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**(3) Available modes for the model runs:** Research

**(4) Components & processes:** Atmosphere, Pedosphere, Biosphere & Physical, Biological

**(5) Brief model description**

The AVIM2 was developed for simulating seasonal and inter-annual variations in biophysical and biogeochemical processes at the land surface. This new version couples the original AVIM (Ji, 1995) with a dynamical soil organic matter (SOM) model. As showing in Figure 1, the AVIM2 includes a plant growth module, a soil vegetation atmosphere transfer (SVAT) scheme and a SOM module. The inputs of the model include precipitation, temperature, humidity, wind, cloud, air pressure, short-wave and long-wave radiation, vegetation types and soil structures. The outputs include NPP, NEP, soil respiration, LAI, vegetation and soil carbon stocks, soil moisture, and latent and sensible heat fluxes. AVIM2 serves as a land surface component in the Earth System Model (ESM) BCC-CSM-1.1 which is one of the ESMs in the Coupled Model Inter-comparison Project 5 (CMIP5).

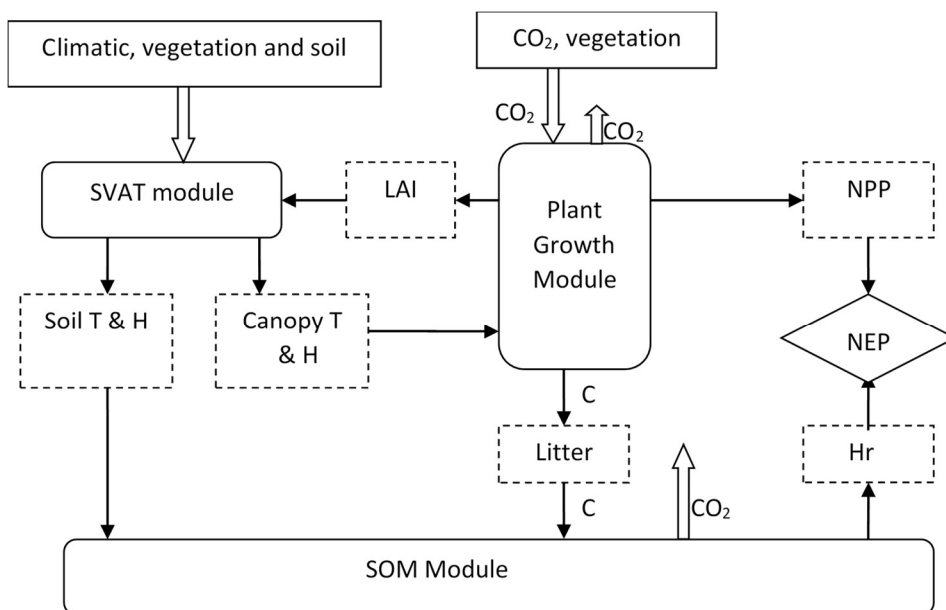


Figure 1: The structure of the AVIM2. The contents in dash line boxes are the outputs of modules, the T, H and Hr means temperature, humidity and heterotrophic respiration, respectively.

**References:**

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Ji J, Huang M, Li K (2008): Prediction of carbon exchanges between China terrestrial ecosystem and atmosphere in 21st century. *Sci China Ser D: Earth Sci* 51:885–898.

Lu, J. and Ji, J., (2006): A simulation and mechanism analysis of long-term variations at land surface over arid/semi-arid area in north China. *J. Geophys. Res.*, 111, (d9): D09306, 1-19.

Ji J (1995): A climate–vegetation interaction model: simulating physical and biological processes at the surface. *J Biogeogr* 22:2063–2069