Seminario CIFOR "Role of mesophyll conductance to CO2 in C3 and C4 photosynthesis"

Fecha: viernes, 24 de mayo de 2019

Horario: 12:00h-13:00h

Lugar: CIFOR - Edificio Celulosas - Sala de Seminarios/Reuniones (2ª planta)

Ponente: Francisco Javier Cano - ARC Centre of Excellence for Translational Photosynthesis & Hawkesbury Institute for the Environment, Western Sydney University (Australia)

(El seminario será en principio en español, con diapositivas en inglés)

Photosynthesis is the biological process by which green leaves produce sugars for plant growth and maintenance and sustain the primary production in most terrestrial ecosystems. It compromises a carrier-mediated diffusion of CO2 transport to the sites of carboxylation coupled with an enzymatic and a biochemical-mediated process of reduction of CO2 and oxidation of phosphorylated sugars as consequence of photorespiration in C3 plants. In C4 plants, the acquisition of CO2 is facilitated by a CO2 concentration mechanism (CCM) at the sites of carboxylation, which consumes energy, but minimizes photorespiration. Historically the largest diffusive resistance was attributed to the stomata, although we now know that there is also a large resistance from sub-stomatal cavities to sites of carboxylation, commonly known by its inverse, the mesophyll conductance (gm), which can be of similar magnitude than the stomatal resistance in limiting the net rate of photosynthesis under many circumstances. I will introduce this new actor that deserves centre stage and illustrate some examples of its variability among and within species and by some environmental conditions. Finally I will highlight the need to consider the gm in photosynthesis models at several scales, for breeding purposes, and at ecological evolutionary level.

Más info en:

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