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STICS Crop Model

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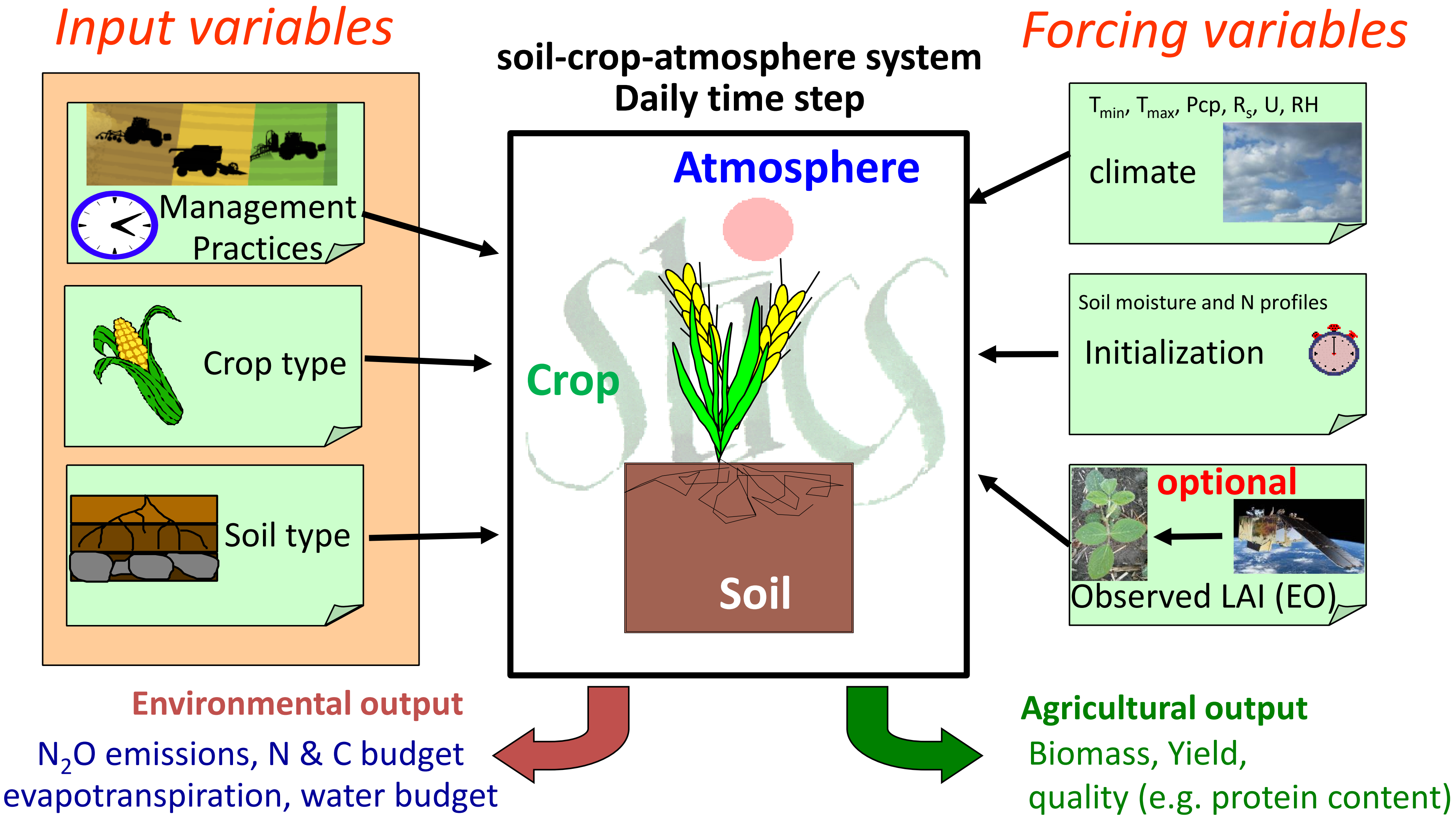
STICS Crop Model

(multidisciplinary simulator for standard crops)

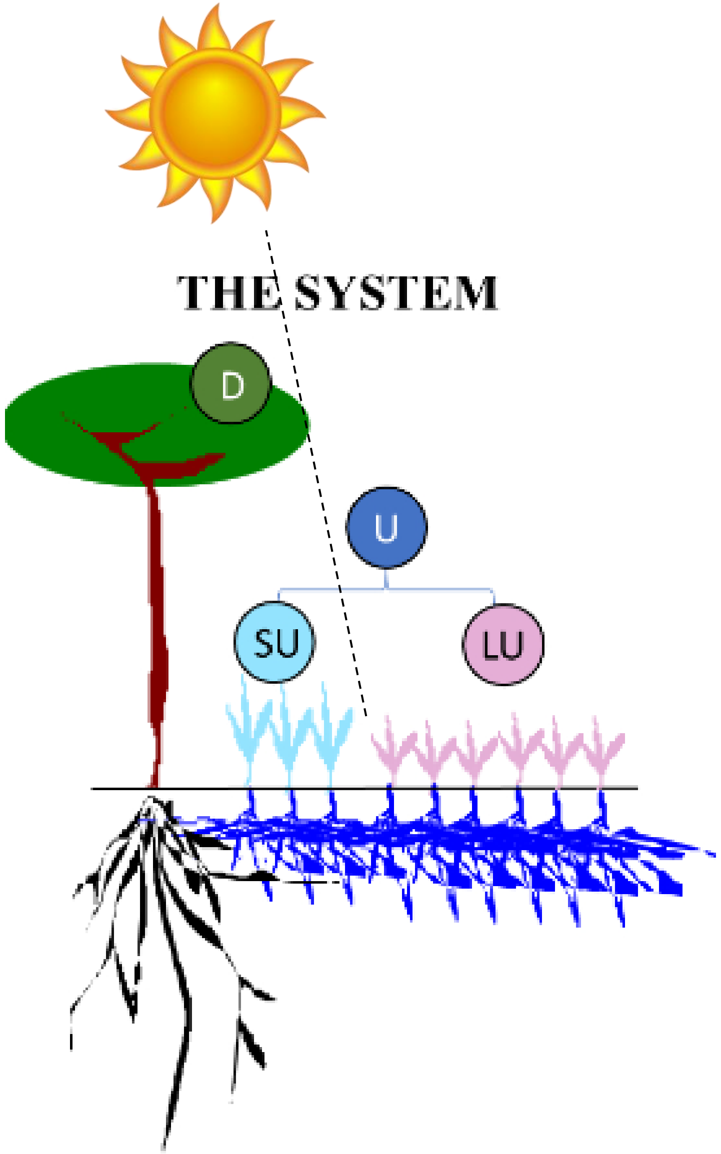


STICS Crop Model

- STICS is validated for simulating several annual and perennial crops used in Canada:
  - Corn (Jégo et al., 2011; Saadi et al., 2022)
  - Soybean (Jégo et al., 2010; Crépeau et al., 2021)
  - Spring wheat (Jégo et al. 2010; Sansoulet et al., 2014)
  - Spring barley (Jégo et al., submitted)
  - Potato (Morissette et al., 2016)
  - Canola (not published)
  - Timothy (Jégo et al., 2013)
  - Alfalfa (Crépeau et al. submitted)

- Validated for cover crops and intercropping systems in Europe (e.g. Constantin et al., 2012; Plaza-Bonilla et al., 2015). Verification in progress under the Canadian growing conditions.

Intercropping systems in STICS



D Dominant crop

U Understorey crop

SU Shaded part

LU Sunlit part

- The soil-plant-atmosphere system is divided into three sub-systems (D, SU and LU), each defined by a light microclimate.

- These light microclimates, estimated from the quantity of solar radiation intercepted, drive the different behaviors of the sub-systems in terms of growth (LAI, dry matter accumulation) and water and nitrogen budgets (transpiration, nitrogen uptake, stress index) at daily time step.

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