

Highlights

1. A model was established to estimate hourly CO₂ flux with 1 × 1 km² resolution in Taiwan.
2. The model was evaluated in two ways with CO₂ uptake and release flux observation data.
3. Annual CO₂ assimilation flux is higher in lower and medium altitude areas with 6–10 thousand ton km⁻².
4. Annual CO₂ assimilation amount was 115.3 million ton with 69% for forests in Taiwan.