

Estimate of Global Fire Risk and Global Area Burnt in the Hadley General Circulation Model Under Present Day and 2xCO₂ Climates

Sergey Venevsky ¹

Abstract

This study presents a first prototype fire model Hadley-FIRE directly implemented into the land surface scheme of the Hadley general circulation model (GCM). The climate model with the implemented Hadley-FIRE was run for current and 2xCO₂ climates. The simulated area burnt was validated using the Global Burnt Area – 2000 remote sensing product. The results for 2xCO₂ future climate suggest that area burnt are going to grow significantly in future especially in the Eastern and Central part of Brazil, Southern Asian part of Russia and the Southern United States.

¹ University of Leeds, Leeds, LS2 9JT, UK and Hadley Centre for Climate Prediction and Research, Met Office, Fitzroy Road, Exeter, EX5 2SN, UK