

# RELATING SPECTRAL REFLECTANCE AND PLANT PHYSIOLOGY IN A PODOCARP FOREST ECOSYSTEM

Natalie T. Boelman  
*Lamont-Doherty Earth Observatory*

E-mail: nboelman@ldeo.columbia.edu

## INTRODUCTION

Terrestrial plants play an important role in the global carbon cycle as they store a significant amount of carbon and account for large carbon fluxes (loss of carbon to the atmosphere via above and belowground respiration vs. gain of carbon by the plants via photosynthesis). Since most plant processes are temperature sensitive (Kramer and Kozłowski 1979), global warming is predicted to have very different effects on the various physiological components (eg. photosynthesis and respiration) that ultimately determine the role that the terrestrial biosphere plays in regulating the global carbon cycle. Will photosynthetic rates increase more than above and belowground respiration so that the terrestrial biosphere acts as sink for carbon? Or will respiration exceed photosynthetic rates, making the terrestrial biosphere a net source of carbon? Understanding the complex interactions between the biosphere, the atmosphere and changing environmental conditions is essential in order to predict how terrestrial plants will respond to our rapidly changing climate.