

# Climate change, economic growth, and health

Masako Ikefuji\*    Jan R. Magnus<sup>†</sup>    Hiroaki Sakamoto<sup>‡</sup>

April 21, 2011

## Abstract

This paper studies the interplay between climate, health, and the economy in a stylized world with heterogeneous regions. We introduce health impacts into a simple integrated assessment model where the local cooling effect of aerosols as well as the global warming effect of CO<sub>2</sub> is endogenous, and investigate how those factors affect the equilibrium path. We show that some of the important aspects of the equilibrium, including emission abatement rates, health costs, and economic growth, depend on the economic and geographical characteristics of each region.

**Keywords:** Climate change, health, economic growth, local dimming

---

\*Institute of Social and Economic Research, Osaka University

<sup>†</sup>Department of Econometrics & Operations Research, Tilburg University

<sup>‡</sup>Graduate School of Economics, Kyoto University, Yoshida-honmachi, Sakyo-ku, Kyoto, 606-8501, JAPAN, Email: hsakamoto@eco.mbox.media.kyoto-u.ac.jp