Tipping point analysis of atmospheric oxygen concentration

Valerie N. Livina (1), Teresa M. Vaz Martins (2), and Alistair Forbes (1)
(1) National Physical Laboratory, Teddington, United Kingdom, (2) John Innes Centre, Norwich, United Kingdom

We apply tipping point analysis to atmospheric oxygen concentration records. We warn that decrease of oxygen concentration from 21% to 19% would lead to significant health problems for humans and other animals, and estimate the time scale of such decline under various anthropogenic scenarios. We suggest that society should be careful with introduction of new mass technologies that utilise double sink of atmospheric oxygen by both combustion and air-consuming synthesis in energy generation and product manufacturing.