

**ESTIMATING THE RATE OF ACIDIFICATION IN ASIAN SOILS,
AS A RESULT OF ACIDIC DEPOSITION, USING A SIMPLE
DYNAMIC MODEL**

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Emissions of SO_x, NO_y and NH_x are increasing in many regions of the world and in several areas little is known about the current deposition of acidic or alkaline compounds and their effects. The work presented describes a simple model linking deposition and soil data to estimate the time development of soil acidification in terrestrial ecosystems. Current chemistry/transport models of the atmospheric cycles of S, N and Ca are used to estimate the global distribution of oxidised S, oxidised and reduced N and calcium deposition. The model incorporates two scenarios for the fate of deposited nitrogen: a) no nitrate leaches; and b) 33% of nitrogen input leaches. According to the model, high ammonium deposition in parts of Asia (e.g. north-eastern India) has the potential to contribute to soil acidification if ecosystems are nitrogen saturated and leach nitrate. It is estimated that if the current rates of deposition remain sensitive soils in China may lose base cations down to 15% base saturation in as little as 10 to 30 years.