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Assessing nitrogen dynamics in European ecosystems, integrating measurement and modelling: conclusions

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Abstract. This contribution closes this special issue of Hydrology and Earth System Sciences concerning the assessment of nitrogen dynamics in catchments across Europe within a semi-distributed Integrated Nitrogen model for multiple source assessment in Catchments (INCA). New developments in the understanding of the factors and processes determining the concentrations and loads of nitrogen are outlined. The ability of the INCA model to simulate the hydrological and nitrogen dynamics of different European ecosystems is assessed and the results of the first scenario analyses investigating the impacts of deposition, climatic and land-use change on the nitrogen dynamics are summarised. Consideration is given as to how well the model has performed as a generic tool for describing the nitrogen dynamics of European ecosystems across Arctic, Maritime, Continental and Mediterranean climates, its role in new research initiatives and future research requirements.

Keywords: nitrogen, nitrate, ammonium, phosphorus, catchments, streams, rivers, river basins

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