Development in pedometrics has not only shaped the research agenda in soil science but also attracted the attention of practitioners from other communities such as environmental modelling and land management who require digital information on soils. At the same time, demands from these communities and developments in information technology help to fuel and drive the research agenda of pedometrics. These factors have combined to draw scientists with diverse backgrounds and interests into the field of pedometrics over its short history as a distinctive subdiscipline of soil science. Furthermore, interest in pedometrics has expanded globally. The 2009 Pedometrics meeting in Beijing is a good example of this expansion and its impact. The meeting not only attracted a large group of young Chinese researchers to participate but also encouraged the development of the pedometrics research agenda in China. For example, pedometrics is a persistent theme in related conferences in China. Furthermore, the Natural Science Foundation of China recently included pedometrics along with digital soil mapping among its keyword database which is evaluated and approved by a panel of experts from a variety of fields in earth sciences.

This special issue contains a set of papers drawn from the 2009 Beijing Pedometrics conference held at the China Agricultural University in Beijing, China under the auspices of the Pedometrics Commission of the International Union of Soil Science. This set of papers reflects the major themes that emerged at the conference. The first theme is captured in the paper by Peter Finke (2012-this issue) which highlights the research priorities in pedometrics with particular reference to the requirements of soil scientists concerned with global change. The paper puts strong emphasis on the need for research on data quality, the incorporation of process knowledge into predictive models, and efforts to communicate with stakeholders about the use and limitation of pedometric techniques and the resulting products.

The dominant theme at the conference, as is often the case at Pedometrics meetings, was digital soil mapping (DSM). These papers covered method development, the covariates used for prediction, and application at national/regional scale. The papers by W. Sun et al. (2012-this issue) and X. Sun et al. (2012-this issue) are on method development. The first developed a locally adaptive approach to regression-kriging. The second examines a challenging issue, which has faced the practitioners of fuzzy classification at large.

Four papers considered the covariates that are used in DSM (Zhang et al., Liu et al., Castrignanò et al., Qin et al.). Zhang et al. (2012-this issue) argues that covariates in the form of categorical variable type, such as land use types, can be used to improve the accuracy of digital soil mapping, and they illustrate this for predictive mapping of soil organic matter content. The paper by Liu et al. (2012-this issue) introduces an intriguing idea of using dynamic patterns extracted from remote sensing data as covariates for digital soil mapping. Castrignanò et al. (2012-this issue) propose an interesting idea for digital soil mapping of subsoil conditions. The paper by Qin et al. (2012-this issue) proposes a fuzzy description of landform positions to produce an integrated covariate for digital soil mapping.

Two papers illustrate application of DSM (Shangguan et al. and Lemercier et al.), both over large areas. The paper by Shangguan et al. (2012-this issue) describes a process to map soil texture across China using soil survey data in the context of regional climate modelling. The paper by Lemercier et al. (2012-this issue) presents an idea for mapping soil properties at the regional level by extrapolating local knowledge, combining a parent material map with other covariates to map soil drainage classes.

The paper by Hoogland et al. (2012-this issue) presents an application of pedometric techniques for modelling the subsidence of peat soils, showing how detailed soil spatial information can be used in process modelling.

The papers in this special issue send a clear signal thatwe are in a digitalworldwhere quantitative informationwith quantified uncertainty is essential andwhere the accumulation of vast amount of geospatial information and the rapid development of geospatial techniques create new opportunities for pedometrics. It is exciting to see how the pedometrics community is embracing this change and also leading the efforts.

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