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**Keynote speech title:**

“Cartography and Its Connecting Role”

## **Abstract**

Since its emergence as a profession, cartography with its map products and map services has been constantly supporting the societal and scientific development and renewing its role. In an era of globalization and interdependence where everything can be spatially, temporally and/or semantically precisely located and related to everything else, cartographers are urged to concentrate more on connections than locations alone.

The location-based view has its strengths in answering questions such as “what” and “how much” is at “where” and “when”. Based on this view, any kinds of continuous distributions can be discretized into individual locations, with each representing a small surrounding area. Depending on the context of applications, locations may take different geometric forms at different levels of detail. Mapmaking and map use activities are hitherto deeply, maybe too deeply, rooted on the location-based view.

Facing the rapidly growing data streams from various high-end and low-end sensor networks and ever-expanding social media, however, the location-based view seems to have reached its limit and is unable to adequately represent the hyper-dynamic world. People are more eager to know “what”, “how” and “why” is happening between the known locations. This gives rise to a connection-based view which should be committed to representing events, processes, behaviors and their causal relations.

This talk will review the evolving role of cartography and reason the necessity of understanding the connections in complex and dynamic systems. A typology of various spatiotemporal and semantic connections are explained and illustrated with examples. Two case studies on acquisition, visualization and analysis of open source events will be introduced to demonstrate the feasibility of connection-based view.

The talk aims at promoting the awareness among cartographers of the research challenges related to recognizing and mapping connection information in big data.

## **Short CV**

Dr.-Ing. Liqiu Meng is a professor in cartography at the Technical University of Munich (TUM), Germany. She finished 1985 MSc in cartography at the Military University of Information Engineering in China, and 1993 PhD in geodetic engineering at Hanover University, Germany. She worked as a senior lecturer for cartography at Gävle University in Sweden (1994-1996). She then became senior technical consultant for GIS for the SWECO Company in Stockholm, whilst also teaching at the Royal Institute of Technology (KTH) (1996-1998). Following her habilitation at the KTH in the field of geoinformation science 1998, she took up in the same year the chair professorship at TUM where she served as senior vice president (2008-2014). She is member of German National Academy of Sciences.

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