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Editorial: Lake records of environmental and climate change on the Tibetan Plateau

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Editorial on the Research Topic
Lake records of environmental and climate change on the Tibetan Plateau

The Research Topic "*Lake Records of Environmental and Climate Change on the Tibetan Plateau*" assembles 21 studies from different regions of the Tibetan Plateau and its margins (Figure 1). The majority of the presented studies address modern processes or Holocene environmental and climate records. Three case studies report late Pleistocene to Holocene lake records and four papers address the earlier climate history of the region between the Eocene India-Asia collision and afterwards until the early Pleistocene (Figure 1). Two additional studies from the eastern and northeastern foreland of the Tibetan Plateau explore more ancient geological processes in the Ediacaran and the Carboniferous, respectively. Studies of the iconic Qinghai Lake focus on the formation of ooids and the provenance of detrital particles in the lake, and on weathering processes in its catchment area (Hao et al.; Tao et al.).

Methods applied by the involved researchers represent a wide range of partly very innovative approaches including a test of branched glycerol dialkyl glycerol tetraethers (brGDGTs) in response to elevation (Wang H. et al.), the establishment of a diatom-based transfer function for water-depth reconstruction (Peng et al.), the presentation of a new varve-thickness index (Zhang Q. et al.), a critical assessment of environmental reconstructions based on sedimentary ancient DNA (sedaDNA) in comparison to inferences based on microscopic analysis of organism remains (Anslan et al.), and the measurements of rarely determined trace-element ratios in calcareous organism remains (Börner et al.; Song and Wang). Applied aspects such as the characterisation of hydrocarbon source rocks and the assessment of lithium resources are tackled in the studies of Xu and Wang, Ding et al.

The Research Topic improves our understanding of geological processes and environmental conditions of the Tibetan Plateau and at its margins in the past and at present, but the conducted analyses also demonstrate that significant gaps in knowledge remain to be tackled by future studies. Thus, we hope that the presented works of the

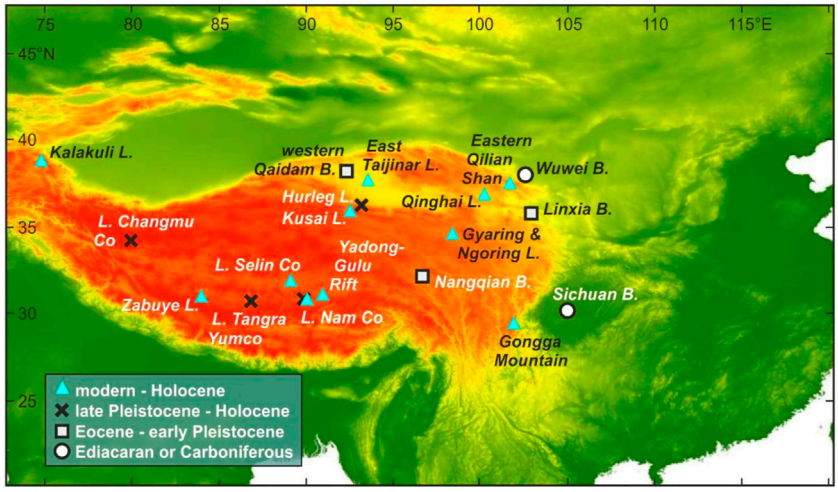

FIGURE 1
Locations of the 21 studies presented in the Research Topic (L.—Lake, B.—Basin).

research topic will stimulate new exciting research on the Tibetan Plateau and along its margins.

Author contributions

SM drafted the editorial, and SM, CZ and YW revised and finalized the text.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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