Special Issue

Responses of Trees to Pollutants

Message from the Guest Editor

The fingerprint of anthropogenic disturbance on urban environmental quality is a relevant question in modern society. Pollutants can be deposited onto plant surfaces, absorbed from the atmosphere by foliage and taken up from soil by roots. The translocation of trace elements depends on tree species and the chemical element: Cation exchange processes may occur within the xylem sap and fluctuations in element concentration can occur from one annual ring to the next. Responses of trees to pollutants conveniently implement modelling processes, towards identifying the physiological plant response and resistance mechanisms, the plant signal in relation to the pollution threshold, as well as suitable trees for urban forestry. Investigations from the field to the experimental level and approaches of monitoring and modeling contributes allow to implement the knowledge and the potential of tree responses in a polluted environment. Moreover, species-specific properties (e.g., tolerance and/or bioindication capacity for specific contaminants) can help planners create an effective monitoring net in strategic urban or peri-urban areas or to detect single contaminants in space and time.

Guest Editor

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