

[Arnald Puy](#)

**Title:** Smoke and mirrors in water modelling

In this keynote I will survey our recent work on uncertainties in water modelling. I will show that knowledge claims in water modelling are as assertive and even more quantified than those in physics-based disciplines, yet their numeric inferences lack an uncertainty and sensitivity analysis (UA/SA). I will show what happens when one of the most spread claims, that humans have exceeded the freshwater planetary boundaries, is examined through a stringent UA/SA. Finally, I will zoom into irrigation modelling to highlight some consequences derived from this cursory approach to uncertainties and sensitivities: delusive accuracy in global irrigation water withdrawal estimates, excess of model complexity given epistemic and empirical limitations, and poor reflective stance, leading to a purely technical treatment of uncertainties. I will conclude by discussing why we should dispel the accuracy conjuring trick in water modelling and by offering some possible ways forward.