Innovative applications of real-time sensor data to improve river water quality and health

Tuesday 14th June
Mathematics Lecture Theatre, School of Mathematical Sciences
Queen Mary University of London, Mile End Road, London E1 4NS

09:00 - 10:00 Arrival, registration, coffee, welcome

10:00 - 10:15 Current status and challenges for real-time sensors and their data analysis (Kate Heppell, QMUL)

10:15 - 10:45 Addressing our water quality policy challenges
(Steve Morris, Defra)

10:45 – 11:00 DISCUSSION

11:00 – 11:20 Use of real-time sensors and machine learning to understand factors controlling water quality in an urbanised chalk stream (Benjamin Schaefer, KIT)

11:20 – 11:40 High-resolution multi-parameter monitoring (Matt Loewenthal, EA)

11:40 – 12:00 DISCUSSION

12:00 – 13:00 LUNCH

13:00 – 13:20 Taking the pulse of our rivers - High-frequency water quality monitoring reveals hotspots and hot moments of water pollution (Stefan Krause, University of Birmingham)

13:20 – 13:40 Using in-situ optical sensors to improve our understanding of water quality dynamics in urban river systems (Kieran Khamis, University of Birmingham)

13:40 – 14:00 DISCUSSION

14:00 – 14:20 Using high resolution data to understand nutrient dynamics and source appointment in catchments (Charlotte Lloyd, University of Bristol)

14:20 – 14:40 Understanding ecological impacts using high resolution data (Iwan Jones, QMUL)

14:40 – 15:00 DISCUSSION

15:00 – 15:30 COFFEE BREAK

15:30– 16:10 Case studies of real-time sensor and machine learning applications at Thames Water (curated by Rosie Nelson) [including validation of EDM data, applications within the sewer network]

16:10 – 16:20 DISCUSSION

16:20 – 16:40 Using AI and water quality instruments for predictive modelling of water quality: a case study. Alex Martin (Wessex Water & Defra)

16:40 – 17:00 SUMMARY DISCUSSION