Tryptophan-like fluorescence- an effective real-time indicator of faecal contamination in drinking water
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Enteric pathogens are typically inferred from the presence of cultured surrogate indicator organisms such as thermotolerant coliforms (TTCs). Their analysis requires suitable laboratories, specialist trained personnel, and is time-consuming, which can limit sampling resolution, particularly during critical pollution events. We will demonstrate the use of tryptophan-like fluorescence as a reagentless, real-time indicator of thermotolerant coliforms from a synthesis of work undertaken on African and Indian groundwater. We will show it is a significant indicator of both the presence-absence and number of these surrogate organisms, including where traditional real-time indicators of surface derived pollution like turbidity fail. The technique is now being trialled as a real-time pollution alert system at public abstraction boreholes in the UK and has potential widespread applications within the WASH and development sector globally.