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A simple pond parametrization for malaria transmission models

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In order to model malaria effectively using a dynamical modelling approach, a realistic representation of the surface hydrology is required. Achieving this goal is hindered by the fact that key vector breeding sites are small in spatial scale, ranging from small permanent ponds to temporary puddles. This small spatial scale confounds modelling efforts as the topography on such small scales is unknown, and also renders detection by remote sensing techniques difficult implying a requirement of in-situ measurements. Results from ongoing measurements of breeding sites in Kumasi (Ghana) are shown, along with attempts to reproduce these using a simple pond 'parametrization'. The significant impact of the pond model implementation and settings on malaria simulations using the new VECTRI dynamical disease model is demonstrated.