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Title: Enumeration and classification of knotted graphs using hyperbolic invariants.

I will describe work with Chiodo, Heard, Saunderson and Sheridan on knotted trivalent graphs in the 3-sphere; and work with Heard, Martelli and Petronio on knotted trivalent graphs in general closed 3-manifolds.

Graphs are enumerated using two different methods: the first based on Conway's approach to enumerating knot projections, the second using triangulations. The graphs are then classified using hyperbolic invariants computed using D. Heard's computer program Orb. Applications to the enumeration of low volume hyperbolic 3-orbifolds will also be mentioned. If time permits, I will conclude with a brief demonstration of Orb.