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Erica Flapan* (eflapan@pomona.edu), 610 N. College Ave., Claremont, CA 91711, and **Will Rowan Fletcher** and **Ryo Nikkuni**. *Generalized Simon invariants of spatial graphs*.

We introduce invariants of spatial graphs which are a generalization of the Simon invariant for embeddings of K_5 and $K_{3,3}$ in S^3 . Then we use our invariants to prove that K_7 , all Möbius ladders with an odd number of rungs, and the Heawood graph each have the property that all of their embeddings in S^3 are chiral. We also use our invariants to obtain lower bounds for the minimal crossing number of particular embeddings of graphs in S^3 . (Received December 20, 2016)