1099-57-37   **Erica Flapan*** (`eflapan@pomona.edu`), 640 N College Ave., Department of Mathematics, Pomona College, Claremont, CA 91711, **Will Fletcher** (`willrowanfletcher@gmail.com`), Biophysics Program, Stanford University, Stanford, CA 94305, and **Ryo Nikkuni** (`nick@lab.twcu.ac.jp`), Department of Mathematics, Tokyo Women's Christian University, 2-6-1 Zempukiji, Suginami-ku, Tokyo, 167-8585, Japan. *Reduced Wu and generalized Simon invariants for spatial graphs.* Preliminary report.

We introduce invariants of graphs embedded in S^3 which are related to the Wu invariant and the Simon invariant. Then we use our invariants to prove that certain graphs are intrinsically chiral, and to obtain lower bounds for the minimal crossing number of particular embeddings of graphs in S^3. (Received January 09, 2014)

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