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Dear Professor Genton:

Attached please find the manuscript “Adaptively-Tuned Particle Swarm Optimization with Application to Spatial Design” by M. Simpson, C. K. Wikle, and S. H. Holan, which we would like to submit to Stat for possible publication. This paper proposes using particle swarm optimization (PSO) algorithms for spatial design problems, and additionally proposes two new classes of PSO algorithms. Specifically, we propose a method to dynamically adjust a key tuning parameter of standard PSO and bare-bones PSO algorithms and show that this leads to more robust optimization for some objective functions. Further, we argue that PSO is a natural technique in spatial design problems and illustrate several PSO algorithms, including our own, in an application focusing on network design for optimal spatial prediction. We also briefly review PSO algorithms and spatial design for a general audience.

Thank you again for all of your time and consideration. Please let me know if there is any additional information you require.

Sincerely,

Matthew Simpson

Postdoctoral Fellow