Abstract Submitted
for the SES19 Meeting of
The American Physical Society

Control applied to pattern formation in non-linear reaction-diffusion systems[1] JASON CZAK, CONNOR MACKERT, MICHEL PLEIMLING, Virginia Tech — The Gray-Scott model has been subject of numerous investigations. Due to the nonlinear nature of the coupled reaction-diffusion equations, the system exhibits interesting behavior for certain parameter sets. In many previous studies of this system investigators have used a limited range of parameter values dictated by neglecting diffusion effects. Through systematic parameter adjustment we are able to find novel system pattern formations that were previously overlooked. We present a comprehensive view of these pattern regions and discuss effects of control schemes applied to this system.

[1]This research is supported by the Army Research Office under the Grant Number W911NF-17-1-0156.

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Date submitted: 27 Sep 2019 Electronic form version 1.4