



Conquering Chaos

Robert J. Monson

University of St. Thomas

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Chaos and Complexity

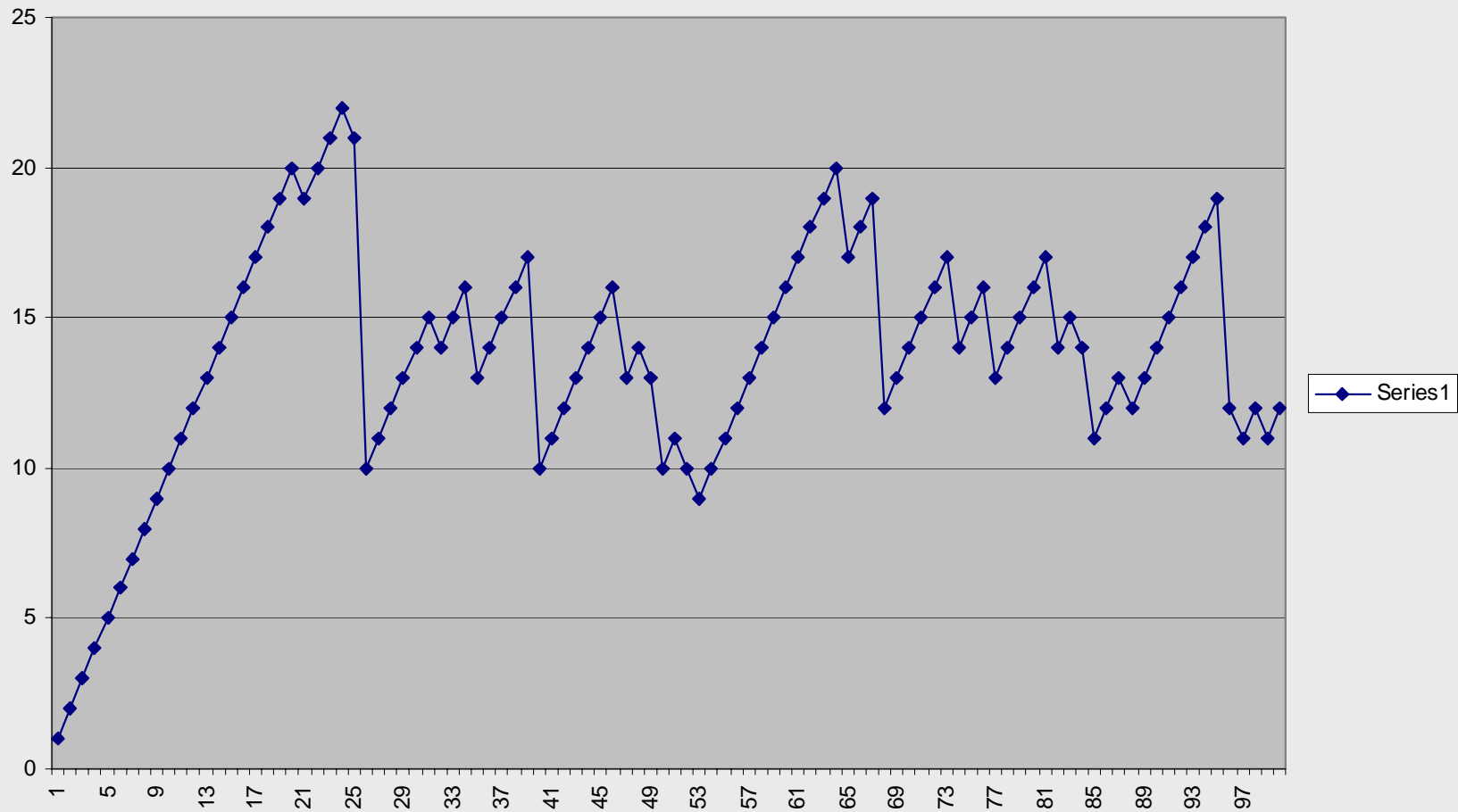
★ The Sandpile model

- ★ Defines the behavior of a simple system
- ★ Representative of many physical and organizational systems
- ★ Provides insight into an appropriate method to plan and manage projects

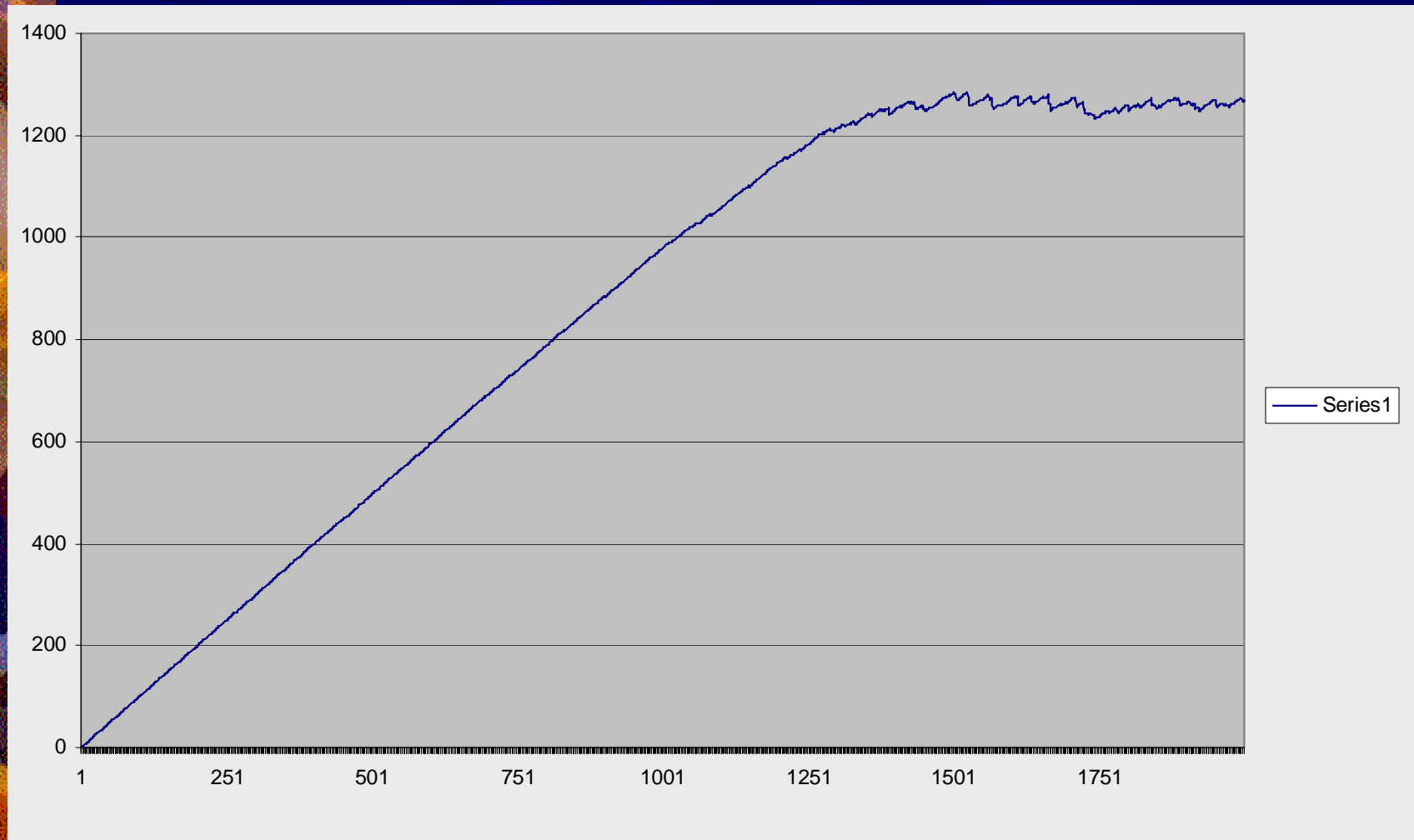
The Sandpile Model

- ★ Examples utilizing a 3×3 matrix
 - ★ Card game example
- ★ Larger examples do not exhibit such a dramatic edge effect
 - ★ 25×25 model used most commonly
 - ★ Use simulation to provide behavior information

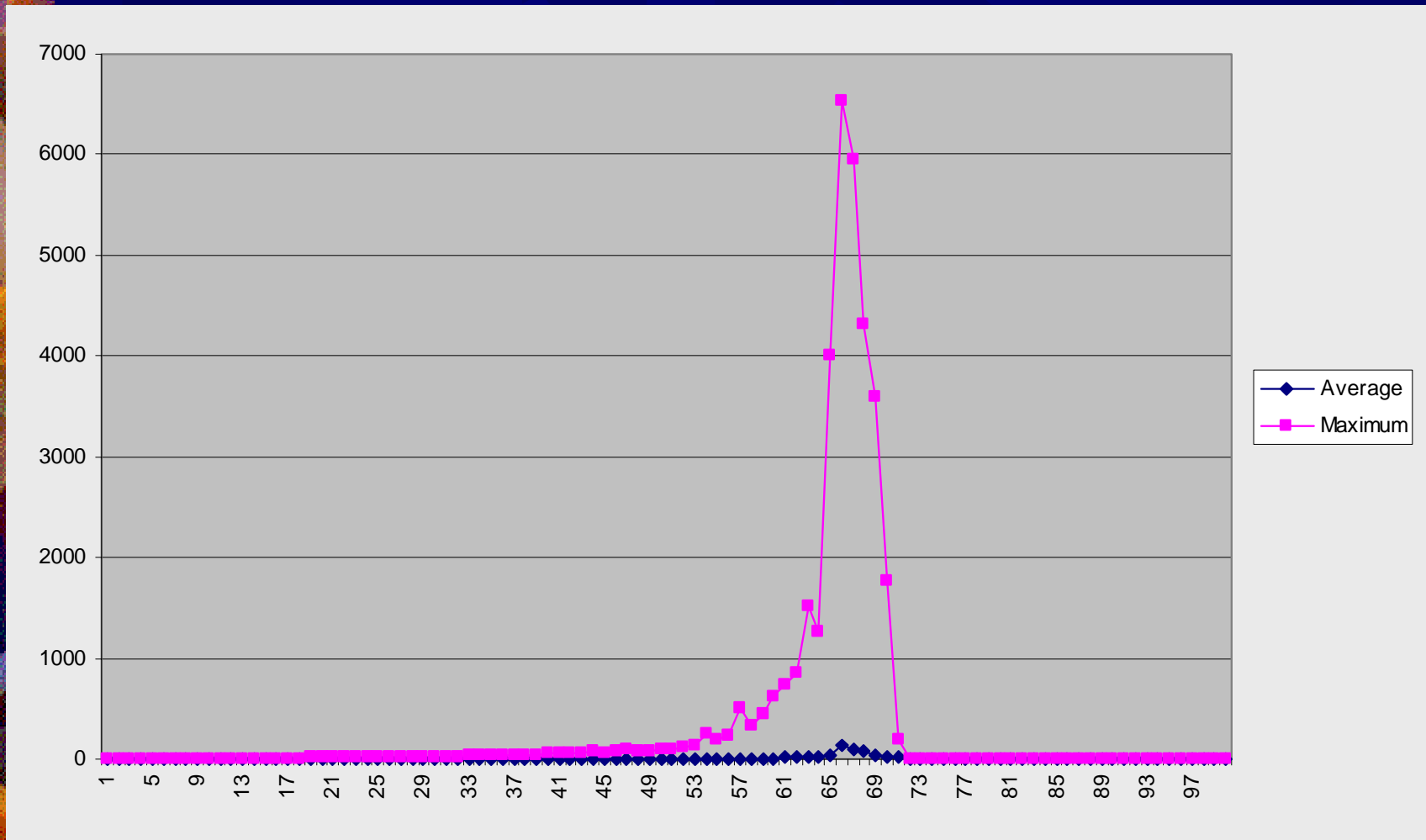
3 X 3 matrix 100 points



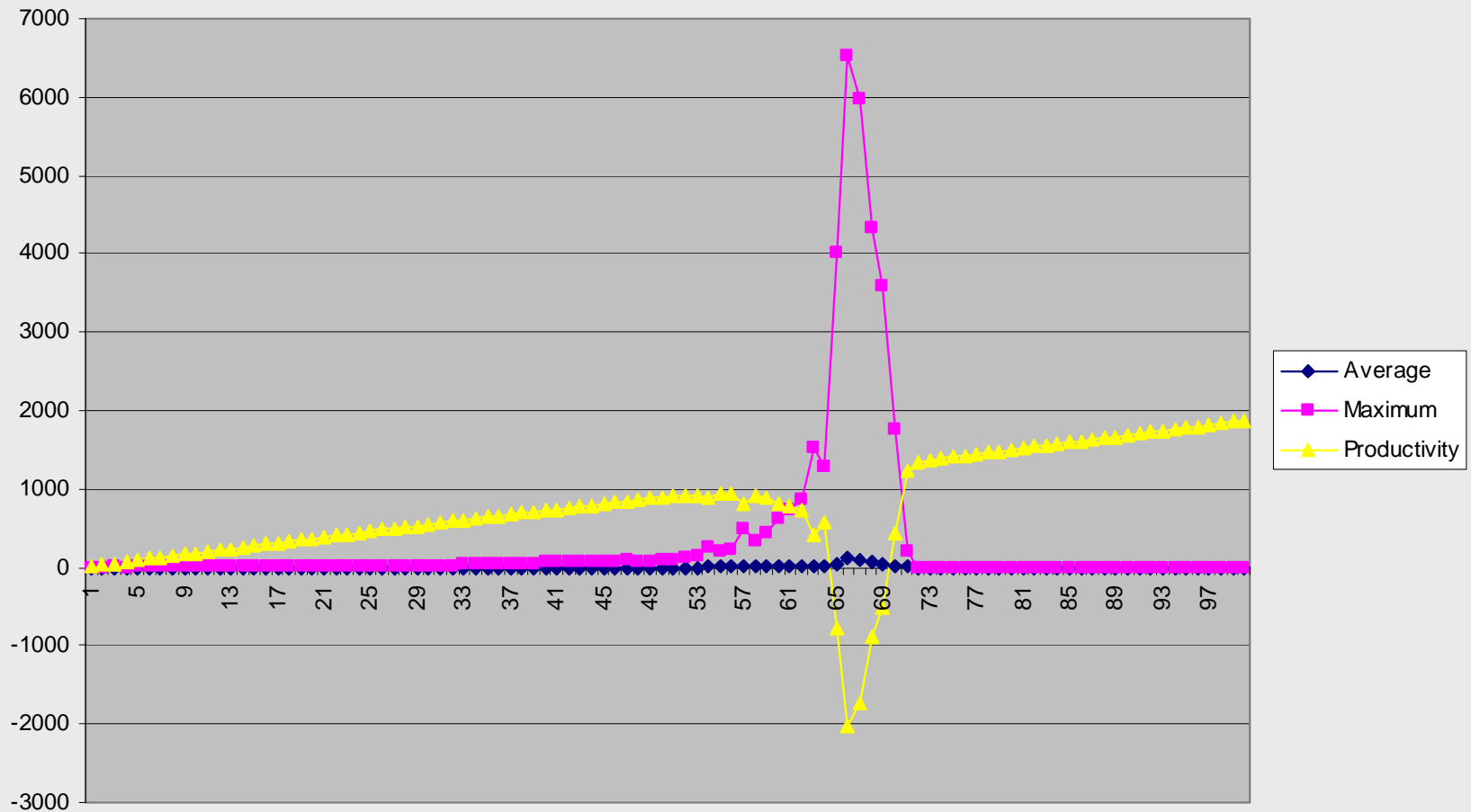
25 X 25 matrix, 2000 pts



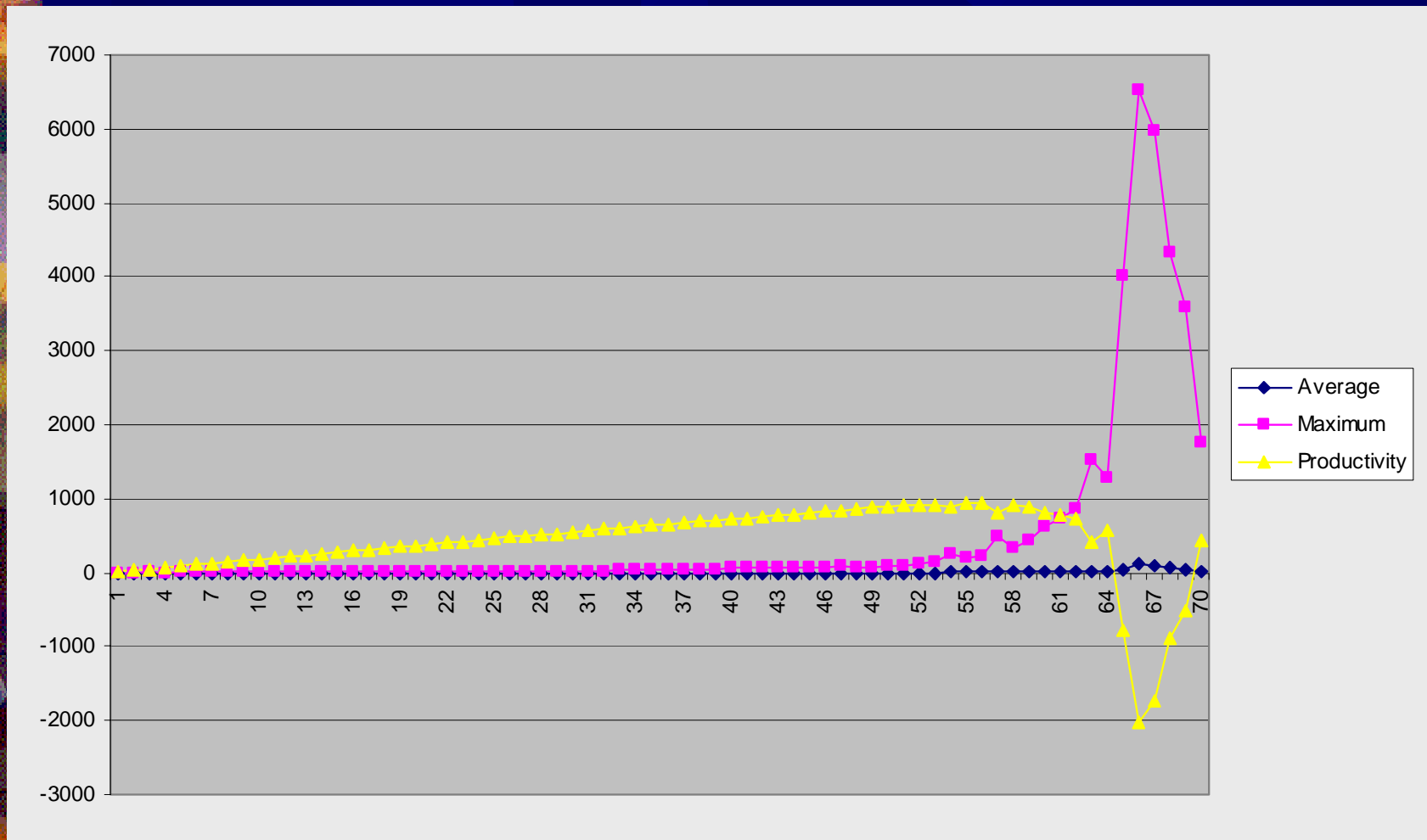
25 X 25, 2M points, 1875 Normalized



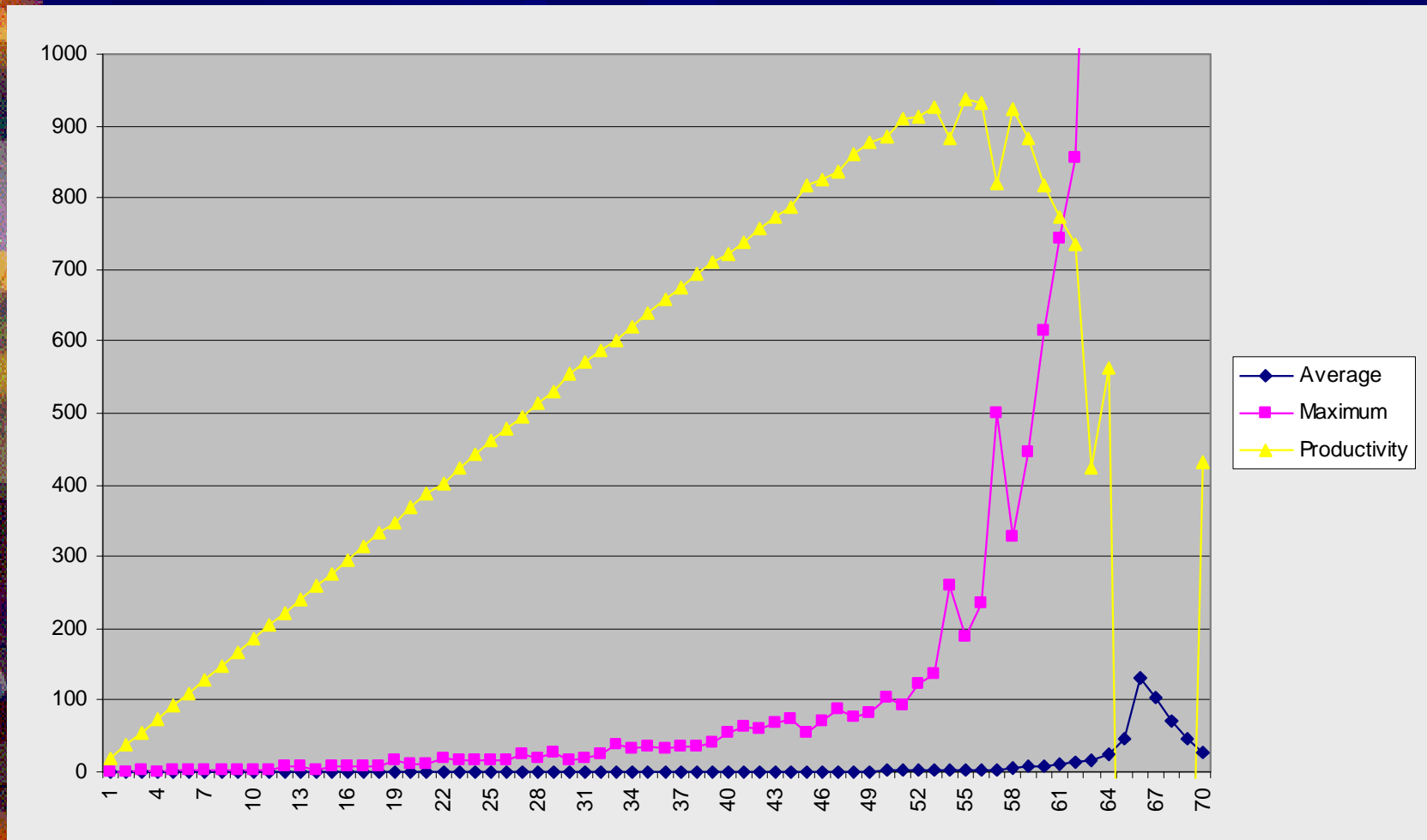
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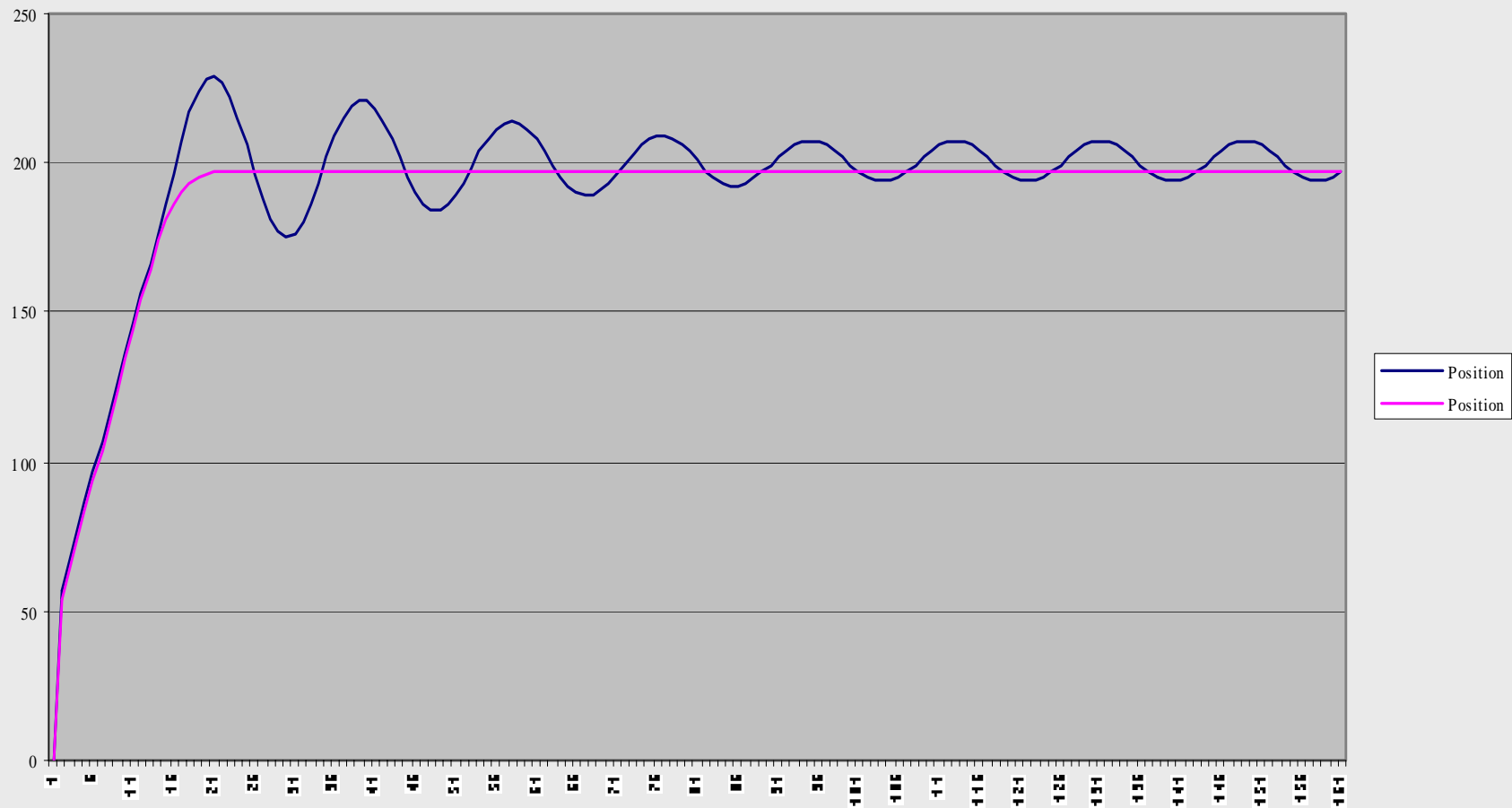
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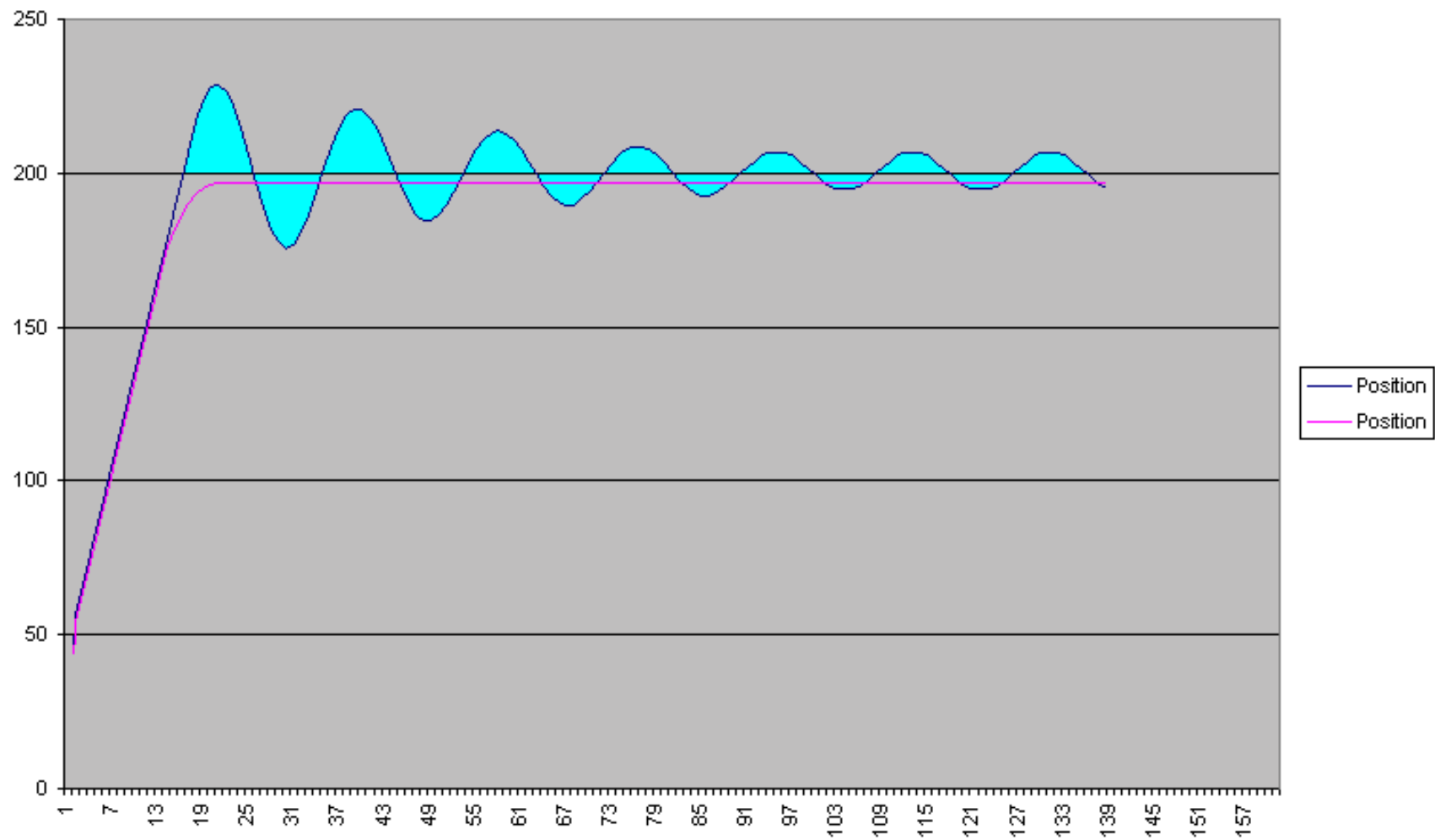


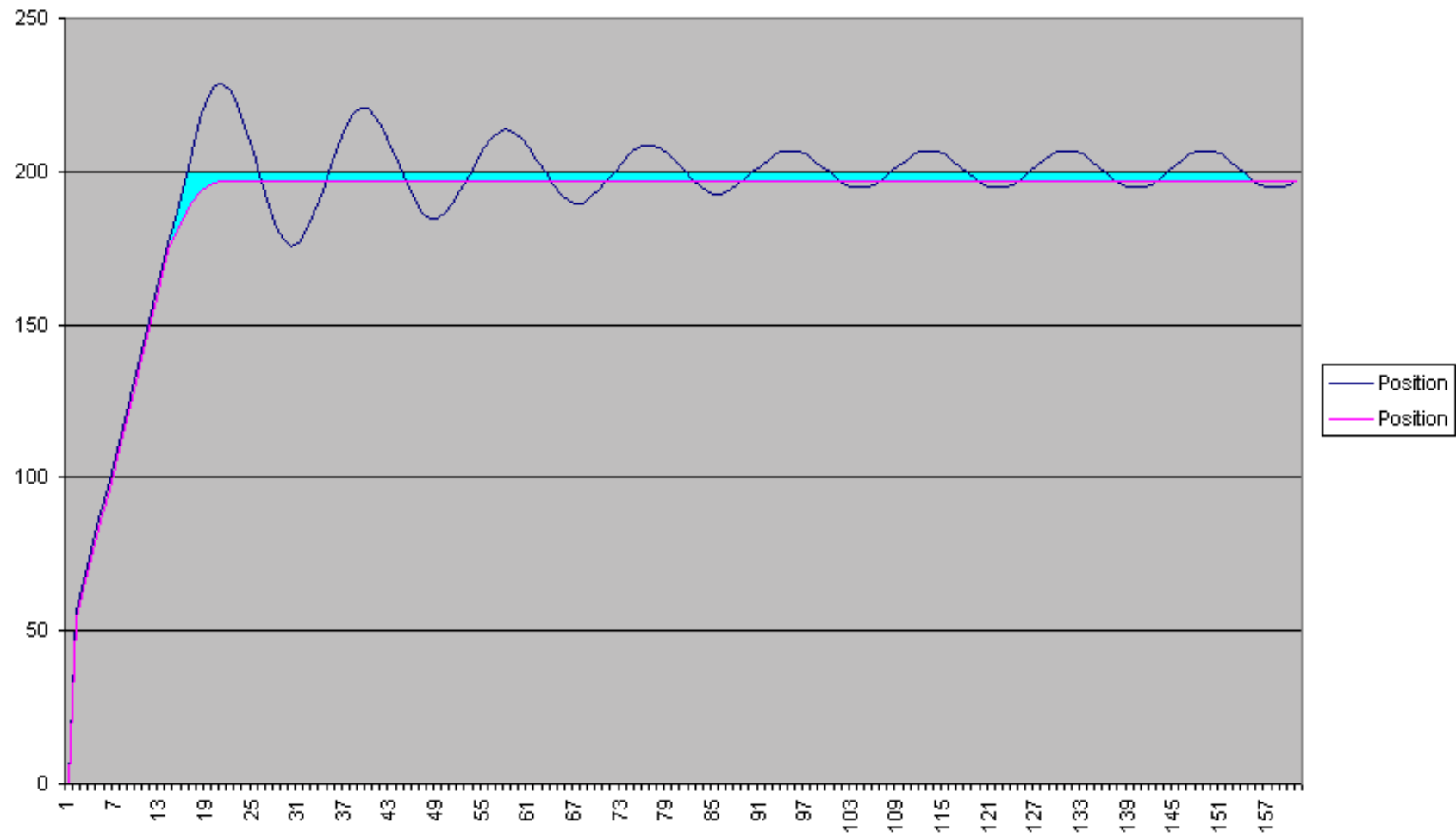
25 X 25, 2M points, 1875 Normalized



Minimizing the cost of fluctuations







Conclusions

- ★ A system will organize itself into a critical state
- ★ The system will 'ring' at that state
- ★ Ringing is an expense to the organization
- ★ We can avoid ringing by planning personnel at 75% capacity, which is the maximum productivity