

**Malyshev, V. A.; Spieksma, F. M.**

**Dynamics in binary neural networks with a finite number of patterns. I: General picture of the asynchronous zero temperature dynamics.** (English) [Zbl 0891.58032](#)

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Summary: We rigorously define and study the limiting dynamics for Pastur-Figotin-Hopfield models of neural networks with  $N$  nodes and  $p$  patterns in the (thermodynamic) limit  $N \rightarrow \infty$ ,  $p \equiv \text{const}$ . We study local and global properties of this limiting dynamics.

**MSC:**

[37C25](#) Fixed points and periodic points of dynamical systems; fixed-point index theory; local dynamics

[68Q80](#) Cellular automata (computational aspects)

**Keywords:**

[Pastur-Figotin-Hopfield models](#); [neural networks](#); [limiting dynamics](#)

**Full Text:** [EuDML](#) [EMIS](#)