

# Synchronization effects related to neighborhood heterogeneity in a random network of non-identical oscillators

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***Abstract.** We explore in this article complex networks of non-identical oscillators. More specifically, we focus on the impact of Similar or Dissimilar neighborhoods over synchronization measures. Maybe contrary to the intuitive idea, our numerical simulations show that the more homogeneous is a network, the higher tend to be the coupling strength required to phase-lock. In addition, more heterogeneous networks exhibits larger values of order parameter, which means that the fixed phase synchronization is closer to full synchronization.*

**Key-words:** *Synchronization, complex networks, Kuramoto model, non-identical oscillators.*

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