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Small World Effects in a Harmonious Unifying Hybrid Preferential Model Networks

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Abstract: Small world effects in the harmonious unifying hybrid preferential model (HUHPM) networks are studied both numerically and analytically. The idea and method of the HUHPM is applied to three typical examples of un-weighted BA model, weighted BBV model, and the TDE model, so-called HUHPM-BA, HUHPM-BBV and HUHPM-TDE networks. Comparing the HUHPM with current typical models above, it is found that the HUHPM networks has the smallest average path length and the biggest average clustering coefficient. The results demonstrate that the HUHPM is more suitable not only for the un-weighted models but also for the weighted models.

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