

THE GALAXIES OF NONSTANDARD ENLARGEMENTS OF INFINITE AND TRANSFINITE GRAPHS

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The galaxies of the nonstandard enlargements of connected, conventionally infinite graphs as well as connected transfinite graphs are defined, analyzed, and illustrated by some examples. It is then shown that any such enlargement either has exactly one galaxy, its principal one, or it has infinitely many galaxies. In the latter case, the galaxies are partially ordered by their “closeness to the principal galaxy. If the enlargement has a galaxy G different from its principal galaxy, then it has a two-way infinite sequence of galaxies that contains G and is totally ordered according to that “closeness property. There may be many such totally ordered sequences.

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