Some Properties Related to Compactness, by J. van der Slot. Mathematical Centre Tracts v. 19, Mathematisch Centrum Amsterdam 1968. 56 pages. Paperback.

This booklet contains a thesis written at the Mathematical Centre in Amsterdam. It deals with various generalizations of compactness; in particular the author introduces the concepts of basiscompactness and $\mathfrak{m}$-ultracompactness ($\mathfrak{m}$ being an infinite cardinal). A space is called basiscompact if there exists an open base $\mathfrak{U}$ such that for each centered family $\mathfrak{U}_1 \subset \mathfrak{U}$ the collection $\mathrm{Cl}\mathfrak{U}_1$ has non-empty intersection. Basiscompactness is stronger than subcompactness but weaker than cocompactness (two generalisations of compactness previously introduced by the Amsterdam school). A space X is called $\mathfrak{m}$-ultracompact if it has a subbase $\mathfrak{S}$ for the closed sets of X such that each ultrafilter $\mathfrak{F}$ in X for which $\mathfrak{F} \cap \mathfrak{S}$ satisfies the $\mathfrak{m}$-intersection property (i.e. each subcollection of cardinal $< \mathfrak{m}$ has non-empty intersection) is convergent. $\aleph_1$-ultracompactness coincides with realcompactness in countably compact normal spaces.

The results about these and related properties are too numerous to list; the main ones are concerned with the study of heredity and productiveness. The final chapter describes a realcompactification of a T_1-space with a suitable subbase analogous to a Hausdorff compactification found previously by J. M. Aarts.

The thesis is well and clearly written and understandable to anybody with a good background in general topology. But because of its specialized content it will only appeal to a limited readership.

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Problems and solutions in ordinary differential equations, by F. Brauer and J. A. Nohel. W. A. Benjamin, Inc., New York, 1968.