

Topological generalized Bruck-Reilly extensions

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The Bruck-Reilly extension of a semigroup is a particular case of Warne extension of a semigroup, by means of which the classes of simple and bisimple omega-semigroups were described [1]. We extend these constructions on the case of a topological semigroup and study the problem of its topologizations and embeddings into compact-like topological semigroups.

We shall give some conditions under which the topological generalized Bruck-Reilly extension admits only the direct sum topology. Also we shall prove that in the case of a topological OIP-semigroup the direct sum topology on the generalized Bruck-Reilly extension can be coarsened. Some examples of topological OIP-semigroups will be given. Also we shall give a topological characterization of some classes of bisimple topological inverse semigroups.

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References

- [1] R. J. Warne, Bicyclic extensions, *Acta Math. Hungar.* **76** (1997), 213–233.