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**Picado, J.**

**Weil nearness spaces.** (English)

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<http://purl.pt/index/pmath/vol/PT/index.html>

<http://www.emis.de/journals/PM/index.html>

Nearness spaces, obtained by axiomatizing the concept of near-collections (alternatively: of uniform covers; alternatively of collections with arbitrary small members), form a pleasant category **Near** that contains the categories **Top<sub>s</sub>** of symmetric topological spaces, **Unif** of uniform spaces and **Cont** of contiguity spaces as nicely embedded full subcategories. By weakening Weil's axioms on entourages for uniform spaces the author obtains the category **WNear** of Weil nearness spaces with similar features: (1) **WNear** is a well-fibred topological construct. (2) **Top<sub>s</sub>** is (up to concrete isomorphism) a bireflective subcategory of **WNear**. (3) **Unif** is (up to . . .) a bireflective subcategory of **WNear**. Moreover, as for topological spaces, uniform spaces and nearness spaces there is a "non-spatial" frame-theoretic generalization of Weil nearness spaces, briefly discussed by the authors.

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- \*54E15 Uniform structures and generalizations
- 54B30 Categorical methods in general topology
- 54E17 Nearness spaces
- 06D20 Heyting algebras
- 18B30 Categories of topological spaces
- 54E05 Proximity structures and generalizations