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**A representation of arithmetic semilattices by closure spaces.** (Chinese. English summary)

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Summary: This paper is mainly devoted to the representation of arithmetic semilattices by closure spaces. Firstly, we propose the notion of arithmetic closure spaces by incorporating an additional structure into a given closure space and give the representation of arithmetic semilattices. Then, the notion of arithmetic approximable mappings between arithmetic closure spaces is proposed and we prove that the category of arithmetic closure spaces with arithmetic approximable mappings is equivalent to that of arithmetic semilattices with Scott continuous as morphism.

**MSC:**

06A12 Semilattices

06A15 Galois correspondences, closure operators (in relation to ordered sets)

06B15 Representation theory of lattices

**Keywords:**

arithmetic semilattice; arithmetic closure space; category equivalence