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## Characterizing posets for which their natural transit functions coincide

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### Abstract

The standard poset transit function of a poset  $P$  is a function  $T_P$  that assigns to a pair of comparable elements the interval between them, while  $T_P(x, y) = \{x, y\}$  for a pair  $x, y$  of incomparable elements. Posets in which the standard poset transit function coincides with the shortest-path transit function of their cover-incomparability graph are characterized in three ways, in particular with forbidden subposets.

**Keywords:** Transit function, ranked poset, underlying graph, geodesic interval, induced-path interval.

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# Karakterizacija delno urejenih množic, katerih naravne tranzitne funkcije sovpadajo

## Povzetek

Standardna tranzitna funkcija delno urejene množice  $P$  je funkcija  $T_P$ , ki priredi paru primerljivih elementov interval med njima, medtem ko je  $T_P(x, y) = \{x, y\}$  za par  $x, y$  neprimerljivih elementov. Delno urejene množice, katerih standardna tranzitna funkcija sovpada z najkrajši poti pripadajočo tranzitno funkcijo njihovega krovno-neprimerljivostnega grafa karakteriziramo na tri načine, med drugim s prepovedanimi podmnožicami delno urejenih množic.

**Ključne besede:** Transitna funkcija, rangirana delno urejena množica, osnovni graf, geodetski interval, interval inducirane poti.