

**Arnautov, V. I.; Filippov, K. M.**

**On maximal chains in the lattice of module topologies.** (Russian, English) Zbl 1020.16033  
Sib. Mat. Zh. 42, No. 3, 491-506 (2001); translation in Sib. Math. J. 42, No. 3, 415-427 (2001).

Let  $(R, \tau_R)$  be a separated topological unital ring and let  $M$  be a left unitary  $R$ -module. The article is devoted to the following questions: 1. Does  $M$  admit an  $n$ -premaximal  $(R, \tau_R)$ -module topology (for the definition, see the authors' paper [Izv. Akad. Nauk Respub. Mold., Mat. 1996, No. 1, 96-105 (1996)]) for each natural number  $n$ ? 2. How do the  $n$ -premaximal topologies on  $M$  look like if they exist?

The authors indicate conditions under which the question of existence of premaximal topologies has a positive solution and has a negative solution. They describe  $n$ -premaximal topologies in the case when  $R$  is a skew field and the topology  $\tau_R$  is determined by a real absolute value.

Reviewer: [A.P.Pozhidaev \(Novosibirsk\)](#)

**MSC:**

[16W80](#) Topological and ordered rings and modules

[54A10](#) Several topologies on one set (change of topology, comparison of topologies, lattices of topologies)

Cited in 1 Review

**Keywords:**

[premaximal topologies](#); [maximal chains](#); [topological rings](#); [lattices of module topologies](#)

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