

**Lorena Tufan,  $H^*$ -Algebre /  $H^*$  - algebra**

**Abstract:** This paper treats the problem of  $H^*$ -algebra. This concept was introduced and studied by Ambrose in the associative case and then the theory was extended by Lee and Jordan in non-associative case. The paper contents two paragraphs: 1)  $H^*$ -algebra with involution; 2) The construction of some  $H^*$ -algebras.

The first paragraphs starts with the definition of a  $H^*$ -algebra, goes on with some properties of it and ends with an important theorem which says that any  $H^*$ -algebra is an orthogonal sum of closed ideals.

The second paragraph contents two parts: in the first one are presented two exemples of  $H^*$ -algebra (the tensorial product of algebras and the matrix algebra). In the second one are introduced the notions of Springer  $H^*$ -algebra and structurable  $H^*$ -algebra, some of their presents and a result which says that if we have a Springer  $H^*$ -algebra we can construct a simple topological structurable  $H^*$ -algebra.

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**Rezumat:** În această comunicare în primul paragraf voi demonstra că orice  $H^*$ -algebră este o sumă ortogonală de ideale închise, iar în al doilea paragraf voi prezenta construcția unor  $H^*$ -algebre.

**Cuvinte cheie:** produs scalar, topologie, ideal închis, spațiu Hilbert