GROTHENDIECK TOPOLOGIES ON CHU SPACES

E. E. Skurikhin and A. G. Sukhonos

We consider the Grothendieck topologies on low semi-lattices, defined by one family, and the corresponding sheaf cohomology. This is a basis to define and study the left and right cohomologies and the left and right dimensions of the Chu spaces. The construction of Chu spaces allows to characterize a large class of quantities, for example, the dimension of a Noether space or the Krull dimension of a ring, the Lebesgue-type dimensions, as well as to compare them with the cohomology dimensions of the corresponding Chu spaces. We prove existence of spectral sequences of the morphisms of the Chu spaces.

Key words and phrases: Grothendieck topology, sheaf cohomology, Chu space, cohomological dimension, flabby dimension, Lebesgue-type dimension, spectral sequence.

Skurikhin Evgenij Evgen'evich
Sukhonos Andrej Grigor'evich

Institute of Applied Mathematics FED RAN,
Vladivostok, 690041 Russia.
E-mail: eesku@iam.dvo.ru
E-mail: agsukh@mail.ru