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STRUCTURE OF VORTEX FIELDS IN PEKERIS WAVEGUIDE TAKEN INTO ACCOUNT OF DISLOCATIONS

B.A.Kasatkin, N.V. Zlobina, S.B. Kasatkin

Vortex fields are the most complex and least studied objects in the acoustics of layered media. They significantly complicate the structure of the sound field due to the appearance of nodal and saddle points in it, in the vicinity of which the concept of the phase of the sound wave becomes uncertain. Therefore, such special points of the sound field are usually called phase front dislocations. In turn, the dislocation structure of the vortex field is most complex in waveguides, which play an extremely important role in theoretical and applied hydroacoustics. In this work, the vortex structure of the sound field and the corresponding dislocation structure of the vortex field are analyzed using the example of a Pekeris waveguide, the sound field in which is constructed within the framework of a non-self-adjoint model formulation of the corresponding boundary value problem.

Keywords: non-self-adjoint model formulation, generalized solution, intensity vector rotor, nodal and saddle points, "reverse" power flows, combination waves.

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About the authors

KASATKIN Boris Anatol'evich, Dr. Sc., prof., Chief Researcher, Institute of Marine Technology Problems FEB RAS, (423) 243-25-78, kasatkas@marine.febras.ru, http://orcid.org/0000-0001-7392-3672,

ZLOBINA Nadezhda Vladimirovna, Chief Researcher, Dr. Sc., Institute of Marine Technology Problems FEB RAS, (423) 243-25-78, zlobina@marine.febras.ru, http://orcid.org/0000-0003-3314-2163

KASATKIN Sergey Borisivich, Leading Researcher, Ph. D., Institute of Marine Technology Problems FEB RAS, (423) 243-25-78, bigcezar@mail.ru, http://orcid.org/0000-0002-0945-8355