Abstract

The laws of convective heat-and-mass transfer in an insulated trailing swirl are experimentally and theoretically studied in this book. Based on experimental data on full-scale and laboratory vortices, the hydrodynamic structure of an insulated trailing swirl is found. The structure reflects the properties of both real hurricanes and flows in devices that operate using the principles of a vortex flow.

The author's hypothesis that turbulent stresses are proportional to the pair products of the components of the averaged velocity vector is used to create a common method of calculation of the laws of convective heat-and-mass transfer in vortex chambers, tubes, and elements of vortex apparatuses.

This book is intended for scientific workers and engineers working in the field of hydrodynamics, thermal physics, power, and chemical engineering and for post-graduate students and students.