

SIMULATING THERMAL FIELDS OF COMPLEX CLOSED STRUCTURE ABOARD RESEARCH SPACE LABORATORY

© 2006 G. P. Anshakov¹, V. V. Biruk², V. V. Vasiliev², V. V. Nikonov², V. V. Salmin

¹«Progress» Design Bureau

²Samara State Aerospace University

Thermal fields are simulated inside the reentry vehicle (RV) of the space lab “Proton”. The object under investigation is a sphere filled with air with solid heat – releasing bodies (scientific devices and apparatus), heat regulations system and fans inside it.

The results obtained provide an idea of the objects temperature conditions depending on the operating condition of the heat regulation system. They also make it possible to elaborate recommendation to improve the system’s efficiency and to simulate the heat flows in advance numerically for optimal location of scientific apparatus inside the RV.