

SPACE EXPLORATION SYMPOSIUM (A3)
Mars Exploration – Part 1 (3A)

Author: Prof. Shuang Li

Nanjing University of Aeronautics and Astronautics, China, lishuang@nuaa.edu.cn

Prof. Yuping Lu

Nanjing University of Aeronautics and Astronautics, China, yplac@nuaa.edu.cn

PRELIMINARY DESIGN AND ANALYSIS FOR CHINA MARS LANDING EXPLORATION MISSION

Abstract

China's first Mars probe, "Yinghuo-1", is expected to be launched using Russia's carrier rocket in the year 2011. After that, china will carry out an independent Mars landing exploration activities. This paper address the preliminary design and analysis for China Mars landing exploration mission. First of all, the aim of mission and science object are proposed; then, the various proper scientific instruments are suggested; next, the optimal Eath-Mars transfer trajectories are analyzed according to C3 contours. Finally, the innovative EDL navigation and guidance scheme is also developed.