**Pavol Jozef Šafárik University, Košice, Slovakia**

The group of University of Pavol Jozef Šafárik Košice (UPJŠ Košice) participating in the MPD experiment is currently composed of :

Assoc. prof. Janka Vrláková Csc., group leader

Prof. Dr.h.c. RNDr. Michal Hnatič DrSc.,

RNDr. Martin Vaľa PhD,

doc. RNDr. Adela Kravčáková PhD.,

Mgr. Zuzana Jakubčinová

We expect to contribute mainly to the investigations in the quark gluon plasma phenomenology and software development and computing for MPD experiment. In more details:

* search for the signatures of the phase transition in heavy ion collisions
* improvement of the algorithms used for the Monte Carlo simulations and event reconstruction
* development of the testing and benchmarking system for comparison of the efficiency of various algorithm implementations
* development of quality assurance (QA) system to meet standards of HEP experiments
* code refactoring
* improvement of overall software development process, setting up and running service deck to get user feedback, adhering to standard software development model
* development of the new methods for analysis of the experimental data
* development and deployment tools for distributed and heterogeneous computing.