

Project Title:

Simulation and Reconstruction of Ultra High Energy Cosmic Rays for the JEM-EUSO Mission

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1. Background and purpose of the project, relationship of the project with other projects

Computersimulations are performed for the JEM-EUSO project. JEM-EUSO (Extreme Universe Observatory onboard the Japanese Experiment Module) is a space mission designed to measure the ultra high energy component of cosmic rays. The simulations are necessary to evaluate the expected performance of the detector in advance.

2. Specific usage status of the system and calculation method

The system is used to compute a large statistic of ultra high energy cosmic particle induced air showers, their measurement and consequent data analysis. The software used is ROOT and ESAF.

3. Result

Currently the status of the simulation software is still under development. Therefore no significant simulation results have been achieved so far.

4. Conclusion

We are confident, that after successful debug and installatin of the software required. The actual simulation will be performed with the use of the system.

5. Schedule and prospect for the future

This is described in our new RIKEN Supercomputer System Grant Request Form.

Further debugging is required. Nevertheless large parallel processing will be required in the near future.

6. If you wish to extend your account, provide

usage situation (how far you have achieved, what calculation you have completed and what is yet to be done) and what you will do specifically in the next usage term.

Up till now almost no computation time was required. No simulation results have been achieved so far. However, large achievements have been made regarding the debugging process of the software (ESAF). In the next usage term, the debugging process will continue, moreover the first simulation results are expected.

7. If you have a "General User" account and could not complete your allocated computation time, specify the reason.

The reason for not using the allocated computation time is basically the status of the software (ESAF). Larger changes within the code were substantial in order to adapt it to the system.

8. If no research achievement was made, specify the reason

Reason why no achievement was made is the debugging process of the simulation software (ESAF)/