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PhD Thesis of Olga Derenovskaya

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The thesis of Olga Derenovskaya with the title "Methods and algorithms for $J/\psi \rightarrow e^+e^-$ decay recognition and reconstruction in the CBM" is aimed at the development of the J/ψ identification methods and corresponding software using the CBM setup. The measurement of charmonium production in heavy-ion collisions via the subsequent decay process of $J/\psi \rightarrow e^+e^-$ is a central part of the CBM research program. The reconstruction of the events of interest should be realized in a real-time experiment. This imposes high requirements as to the efficiency and speed of processing algorithms. Within her thesis, Olga Derenovskaya has elaborated a chain of methods and algorithms to select the signal events from a dominant background, and estimated the possibility of the acceleration of data processing with the help of high performance computing. The developed methods demonstrate that the CBM experiment can accumulate high statistics data on the process $J/\psi \rightarrow e^+e^-$ at a reasonable time interval.

I strongly support the submission of Olga Derenovskaya thesis which is an important contribution to the performance of the CBM experiment.

With my best regards,

Peter Senger

CBM spokesperson