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## Study of a software multiplicity-trigger algorithm

Multiplicity trigger is a method based on measuring the number of fired detector channels after a reaction. And it is a commonly used trigger method in particle physics experiments. The trigger system is usually implemented through hardware, such as NIM modules or FPGA devices. However, the hardware is often deeply bound to the back-end system, and it is difficult to adjust the trigger logic, lack of adaptation and scalability. Therefore, for some experiments, it is also possible and valuable to use a software trigger system. This paper introduces one of the common implementations of the multiplicity software trigger algorithm and analyses the factors affecting computational efficiency. Finally, under the condition that only the computational efficiency is concerned without real physical indicators, an improved algorithm with better performance efficiency is proposed in this article.

### Minioral

Yes

### IEEE Member

No

### Are you a student?

Yes

**Authors:** 季, 筱璐 (中国科学院高能物理研究所); 彭 PENG, 宇 Yu (中国科学院高能物理研究所)

**Presenter:** 彭 PENG, 宇 Yu (中国科学院高能物理研究所)

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