1 Название работы

Resolution of SPD Detector in the Search
for Dibaryons with small energy excitations

2 Авторы

Андреев Владимир Филиппович (Физический Институт Российской Академии наук, Москва, Россия),

Иванов Артём Викторович(Обьединённый Институт Ядерных Исследований,Дубна,Россия),

Костенко Борис Федотович(Обьединённый Институт Ядерных Исследований,Дубна,Россия),

Курбатов Владимир Сергеевич(Обьединённый Институт Ядерных Исследований,Дубна,Россия),

Курманалиев Жанибек(Евразийский Национальный Университет имени Л.Н. Гумилёва, Казахстан)

3 Докладчик

Курбатов Владимир Сергеевич

4 Категория конкурса

Научно-методические работы

5 Аннотация работы

The existence of dibaryons, the systems with baryon number two, is one of the central questions in modern nuclear physics. It is closely connected with the problem of phase transitions in nuclear matter, various manifestations of which are being searched for in the experiments with colliding heavy nuclei. Since the theory of these processes is very difficult, the interpretation of such data usually contains large uncertainties. At the same time there is a possibility of understanding some features of these processes in the collision of the lightest nuclei - deuterons. Exploring such an opportunity at the future NICA SPD is the focus of this paper.

It is shown that while using Kinematical fit technique at the simulation of the process $d+d \rightarrow d + X$ below meson production threshold, the accuracy of the estimation of the X mass is on the level $2 \div 3$ MeV when the deuteron moment of the NICA Collider is equal 2.6 GeV/c (below MX is used as a mass of X, i.e. $MX = M_d + E_{exc}$,

where M_d, E_{exc} are deuteron mass and excitation energy). The system X is called sometimes as dibaryons below.

6 Публикация

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