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"Diffractive production of $\pi^-\pi^-\pi^+$ and $\pi^-\pi^0\pi^0$ systems at VES."

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The VES experiment has collected high statistics for exclusive reactions with three pion final states: $\pi^-\pi^-\pi^+$ (about $30 \cdot 10^6$ events) and $\pi^-\pi^0\pi^0$ (about $16 \cdot 10^6$ events).
The 3π systems are produced by π^- beam ($E_{beam} = 28.9$ GeV) impinging on the beryllium target.

The dominant production mechanism is the pomeron exchange between incoming beam pion and the target. At low momentum transfer squared $t' < 0.05 GeV^2$ the data clearly shows coherent diffractive production on the whole nucleus which is replaced by incoherent process on the individual nucleons at higher $0.05 < t' < 1$ GeV^2.

The mass-independent partial wave analysis is performed dividing data into
the bins of $m(3\pi)$ and t'.
The comparison of results with two models of PWA: using formalism of full rank density matrix
and, oppositely, using rank=1 is presented.

The predicted isospin relations (assuming $I = 1$ of 3π systems) and observed ones for intensities and relative phases in $\pi^-\pi^-\pi^+$ and $\pi^-\pi^0\pi^0$ are shown.

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