Study of the $\omega\pi$ system in the reaction $\pi^- p \to \omega\pi^- p$ at 18 GeV/c.

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The data collected in the 1994 run of E852 at the MPS facility of BNL is used to do a partial wave analysis of the $\omega\pi^-$ system, where $\omega \to \pi^+\pi^-\pi^0$. Both ω and η mesons are seen in the 3π mass spectrum. After an ω selection, the 4π spectrum shows $\rho_3(1690)$ and $b_1(1235)$ mesons as expected. The motivation behind this study is to identify all waves contributing to the $\omega\pi^-$ system, which will be used in the future analysis of the $\omega\pi^-\pi^+$, aimed at exotic final states in the $b1^{\pm}\pi^{\mp}$system. This is a favored channel for hybrid meson decays (N. Isgur, R. Kokoski, and J. Paton, Phys.Rev.Lett. 54(1985)869).