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A conventional explanation of the ”dibaryon d*(2380)” peak

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In a recent work with Raquel Molina, and Natsumi Ikeno, we have found an explanation for the peak observed in the pn -> pi+ pi- d reaction (pi0 pi0 d) that has been associated to a dibaryon d*(2380) so far. A sequential mechanism of single pion production pn-> pp pi- followed by pp -> pi+ d (plus pn -> nn pi+ followed by nn -> pi- d) reproduces the observed peak in strength, position and narrow width. The two ingredients entering the calculation are the pn -> pp pi- cross section in isospin I=0, recently measured, and the pp -> pi+ d cross section, well known, but only now identified as a consequence of a triangle singularity , which gives it an abnormal large strength compared to other fusion reactions. The picture explains why the "d*(2380)" peak is not seen in the gamma d -> pi+ pi- d reaction and is also not observed in the pp mass distribution of the BESIII e+ e- -> p p pbar pbar reaction.

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