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## Narrow S-wave resonance in pion-baryon system

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As the pion mass approaches a critical value  $m_{\pi}^*$ , an S-wave baryon resonance can cross pion-baryon threshold, thus driving the scattering length to diverge. Charmed baryon resonance  $\Lambda_c^+(2595)$  appears to be a realization of such a system. I explore the consequences of chiral symmetry for  $m_{\pi}$  near  $m_{\pi}^*$ , which are all centered around the finding that if  $m_{\pi}^*$  is not too large, the effective range of such a system is unexpectedly large, proportional to  $4\pi f_{\pi}^2/m_{\pi}^3$ .

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