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Lingjun Zhou* (zhoulj@tongji.edu.cn), 1239 Siping Road, Department of Mathematics, Tongji University, Shanghai, 200092, Peoples Rep of China. *Multipeakons in the Degasperis-Procesi Equation II.*

Degasperis-Procesi equation (DP) is an integrable PDE admitting singular solutions consisting of sharp peaks, which are called peakons. The dynamics of the peakons can be studied using ODEs. If the solution admits both peakons and antipeakons, the solution will usually blow up as peakons collide with anti-peakons. The type of the singularities can be understood by the analytic property of the ODE solution. In this talk, I will describe the behaviour at the collisions. It is shown that peakons and antipeakons can only collide in pairs and there are no multiple collisions. Specially, simultaneous collision can happen for some initial condition. This is joint work with Jacek Szmigielski. (Received September 19, 2011)