1023-35-910   **Zhijun Qiao***, 1201 W Univ Dr, Edinburg, TX 78541. *Peaked Solitons Equations.* Preliminary report.

In this talk, we propose a new completely integrable wave equation: $m_t + m_x(u^2 - u_x^2) + 2m^2 u_x = 0, m = u - u_{xx}$. The equation is proven to have Lax pair and bi-Hamiltonian structures. This equation possesses new peaked solitons instead of regular peakons $ce^{-|x-ct|}$ with speed c. Through investigating the equation, we develop a new kind of soliton solutions "W or M"-shape-peaks solitons. (Received September 22, 2006)