

1046-35-1851 **TAEWAN PARK*** (tae-wan.park@millersville.edu), 1505 Butter road APT6, Lancaster,
PA 17601. *The physical model of a Variational Nonlinear Wave Equation.*

We analyze the existence of smooth global solutions of a variational nonlinear wave equation which originates from the modeling of orientation waves in a massive nematic liquid crystal director field. We prove that the equation has the global solution in higher space dimension and smooth solutions develop singularities in finite time in one space dimension. And also gave the physical model of a Variational Nonlinear Wave Equation in higher space dimension. (Received September 16, 2008)