1070-76-12 **Dharmendra Tripathi*** (`dtripathi.rs.apm@itbhu.ac.in`), Mathematic Group, BITS-Pilani, Hyderabad Camp, Hyderabad, 500078, India. *Peristaltic Transport of Fractional Oldroyd-B Fluids through the Channel.* Preliminary report.

A numerical study is designed to examine the peristaltic transport of fractional Oldroyd-B fluids through the channel. Analysis is carried out under the assumptions of long wavelength and low Reynolds number. Numerical and analytical approximate solutions of problem are obtained by using homotopy analysis method. It is assumed that the cross-section of the channel varies sinusoidally along the length of channel. The effects of fractional parameters, material constants (relaxation time and retardation time), time and amplitude on the pressure and friction force across one wavelength are discussed. It is found that the effect of both fractional parameters on pressure is opposite to each other i.e. pressure reduces with increasing the magnitude of first fractional parameter whereas it increases with increasing the second fractional parameter. The effects of relaxation time and retardation time on pressure are similar to that of first and second fractional parameters respectively. (Received November 07, 2010)