1079-03-18 **Serap Tutkun*** (serapmat89@gmail.com), Ege University, Department of Mathematics, 35100 Izmir, Izmir, Turkey, and **Ahmet Yildirim** and **Praveen Kumar Gupta**. *Analytical approach to multi-dimensional fractional Hemlhotz equation.*

The article presents the approximate analytical solution of a multidimensional partial differntial equation such as Helmholtz equation with space fractional derivatives. By using inital and boundary values, the explicit solutions of the equation are solved with powerful mathematical tools like He's homotopy perturbation method (HPM). The results reveal that the HPM is demonstrate the effectiveness, validity, potentiality and reliability of the method in reality and gives the exact solution. (Received October 16, 2011)