1023-33-965 **Vladimir V Varlamov\*** (`varlamov@utpa.edu`), Department of Mathematics, University of Texas - Pan American, 1201 W. University Dr., Edinburg, TX 78539. *Fractional derivatives of products of Airy functions and their applications.*

Representations are obtained for the fractional derivatives of the products of Airy functions $Ai^2(x)$ and $Ai(x)Bi(x)$. These formulas turn out to be especially attractive for semi-integer derivatives. More general integral representations are derived for the fractional derivatives of the function $Ai(x-a)A(x+a)$ with real $a$ and its Hilbert transform. Applications are shown to Korteweg-de Vries and Ostrovsky equations. (Received September 23, 2006)