Centro de Investigação em Matemática e Aplicações
Departamento de Matemática
Programa de Doutoramento em Matemática

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On the well-posedness of the WBK system
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Abstract. The Whitham-Broer-Kaup equations were introduced by Kupershmidt in 1985 as a combination of three independent systems derived by the authors listed. These systems describe waves in shallow water. Despite its physical similarity to the Boussinesq systems, its mathematical properties differ. Since the WBK system is assumed to be linearly ill-posed, there is little work on its theoretical study. I will show, with a few assumptions on the parameters, that the system is in fact locally well-posed (and globally well-posed for certain non-linearities). This is a joint project with Nabil Bedjaoui (LAMFA) and Rajesh Kumar (BITS Pilani).