On analyticity and smoothness of solutions of first order nonlinear pdes

ABSTRACT. We will discuss the microlocal smoothness and analyticity of solutions $u$ of of the nonlinear pde $u_t = f(x, t, u, u_x)$ under some assumptions on the repeated brackets of the linearized operator and its conjugate. Here the variables $(x, t) \in \mathbb{R}^m \times \mathbb{R}$, $f(x, t, \zeta_0, \zeta)$ is complex-valued, real analytic in all its arguments and holomorphic in $(\zeta_0, \zeta)$. 