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## **About the Optimality of Oscillations in Non-Lipschitz Coefficients for Strictly Hyperbolic Equations**

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*Dedicated to Professor Masaru Yamaguchi on the occasion of his sixtieth birthday*

**Abstract.** In the present paper we explain the classification of oscillations and its relation to the loss of derivatives for a homogeneous hyperbolic operator of second order. In this way we answer the open question if the assumptions to get  $C^\infty$  well posedness for weakly hyperbolic Cauchy problems or for strictly hyperbolic Cauchy problems with non-Lipschitz coefficients are optimal.

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