# Comparison of Riemann solvers in fluid dynamics by weighted error number

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After using a numerical method our eyes are good witnesses whether that method is good or not. We aim to provide, for first order hyperbolic systems, a number that measures, determines the quality of a method instead of deciding by figures. This number is based on the $\ell_1$ vector norm of the error vector, combined with weighting. This weight vector has bigger values near discontinuities and kinks because most of the Riemann-solvers have difficulties (including numerical diffusion and oscillations) in solving the equations near these states.