报告题目：Purely interior estimates for a kind of two dimensional Monge-Amp\`ere equations

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报告摘要：

In this talk, we discuss a kind of fully nonlinear equations of Monge-Amp\`ere type, which can be applied to problems arising in optimal transport, geometric optics and conformal geometry. When the coefficient of the regular term has positive lower bound, the purely interior Hessian estimate is already known for higher dimensional case. When the coefficient of the regular term is equal to zero, singular solutions can be constructed for $n\ge 3$, while the purely interior Hessian estimate is obtained for $n=2$ case. As a byproduct, a new and simple proof of the purely interior Hessian estimate for the two dimensional standard Monge-Amp\`ere equation is provided.