

**The robustness measures for decision-making
in engineering design**

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Generally, uncertainties are considered with proper variability measures according to their characteristics (i.e. economic term or technical term). For economic robust optimization, the use of either worst-case value or partial mean as a robustness measure is proved to guarantee Pareto optimality. In this study, the comparison between worst-case value and partial mean is carried out in the viewpoint of a robustness measure. The study of the ill-conditioned natures of partial mean leads us to the conclusion that worst-case value is more reasonable for robust optimization. Furthermore, the robust optimization results with economic and technical consideration together are illustrated with the power capacity expansion model.