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Uncertainty analysis in acoustical modeling of room

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For a long time there is a need in industry of acoustical modeling of rooms. It is necessary for new production room design, machine exchange, renovation or enlargement of production rooms, change in a production profile or acoustical room adaptation for acoustical work conditions improvement. In such cases modeling quality is essential and thanks to uncertainty analysis it is possible to quantitatively estimate the effect that input parameters value variation has on model behavior. The article presents general rules for sound pressure level prediction uncertainty calculation in a room. By partial uncertainty calculation analysis of input parameters influence on uncertainty prediction an effort was taken to find parameters with biggest influence on the prediction process. As an example an industrial production room is presented which was modeled to predict noise level on a work stands after it was expanded.