

ACOUSTICS2008/662 Modal probabilistic analysis

Christophe Heinkele^a and Claude-Henri Lamarque^b

^aENTPE/DGCB, Rue Maurice Audin, 69518 Vaulx-en-Velin, France

^brue Maurice Audin, 69100 Vaulx-en-Velin, France

In this paper, we first recall a method for estimating the numerical Probability Density Function (PDF) with Parzen-Rosenblatt estimators of experimental data (like the sound absorption coefficient with the Kundt's tube). Then we focus on the model of Mikki which is used as a predictive tool. We are interested then in inverting the model and in identifying the 3 parameters (q, σ, ϕ) of Mikki's model. But we want to go further and to identify from the estimated PDF directly the PDF of the 3 parameters. We explain first when it is possible, then we give some examples to illustrate the method. This work allows for evaluating the robustness of a model from experimental data.