

BALANCING PRINCIPLE IN SUPERVISED LEARNING FOR A GENERAL REGULARIZATION SCHEME

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We discuss the parameter choice in learning algorithms generated by general regularization scheme. In contrast to classical deterministic regularization, the performance of regularized learning algorithms is influenced not only by the smoothness of a target function, but also by the capacity of a regularization space. In supervised learning both the smoothness and the capacity are intrinsically unknown. Therefore, we are interested in a posteriori regularization parameter choice rules and propose a new form of the balancing principle. We provide the analysis of the proposed rule and demonstrate its advantages in simulations.

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