Understanding the literature on model selection and model combination

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Model selection criteria and related theories (e.g., on consistency and asymptotic optimality) have been obtained from different perspectives and under different conditions. In spite of a huge literature on the topic, there seem to be big gaps or insufficient understanding that prevent integration of the different pieces of theoretical and numerical results into a harmonious picture. In this talk, we will discuss/share efforts/results and our questions/views along this line, with some recent results on model selection and model combination in directions of model selection diagnostics and localized model selection.