Using Global Models with Parallel Direct Searches

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This talk will describe a collaboration between Boeing, IBM, Rice, and William & Mary to optimize extremely expensive objective functions, e.g., one week on a modern workstation for each objective value. Such problems arise often in engineering design and in manufacturing process design. Our approach is novel, but rigorous. However, there is scant computational evidence as yet to support it, and so the talk must be viewed as a report on work in progress. This research is supported by AFOSR, DOE, and NASA in addition to the companies involved.