

Technology Transformation "Advanced Modeling"

Mathematical and Analytical Models

$$u_i^2 = \sum_{j=1}^N \left(\frac{\partial u_i}{\partial x_j} \right)^2 u_j^2(x_j) + 2 \sum_{j=1}^{N-1} \sum_{k=j+1}^N \frac{\partial^2 u_i}{\partial x_j \partial x_k} u_j(x_j) u_k(x_k)$$

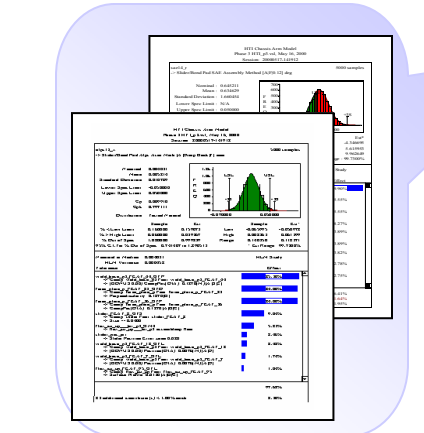
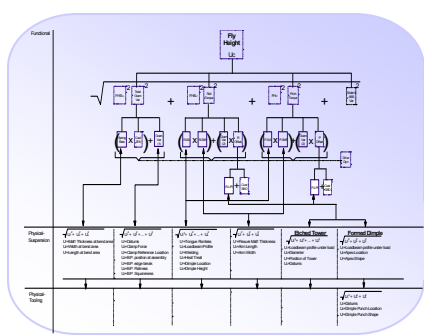
long-term stability

temperature, expansion, bending, measurement tools & strategy, basic axis geometry, random effects, systematic effects, process processes

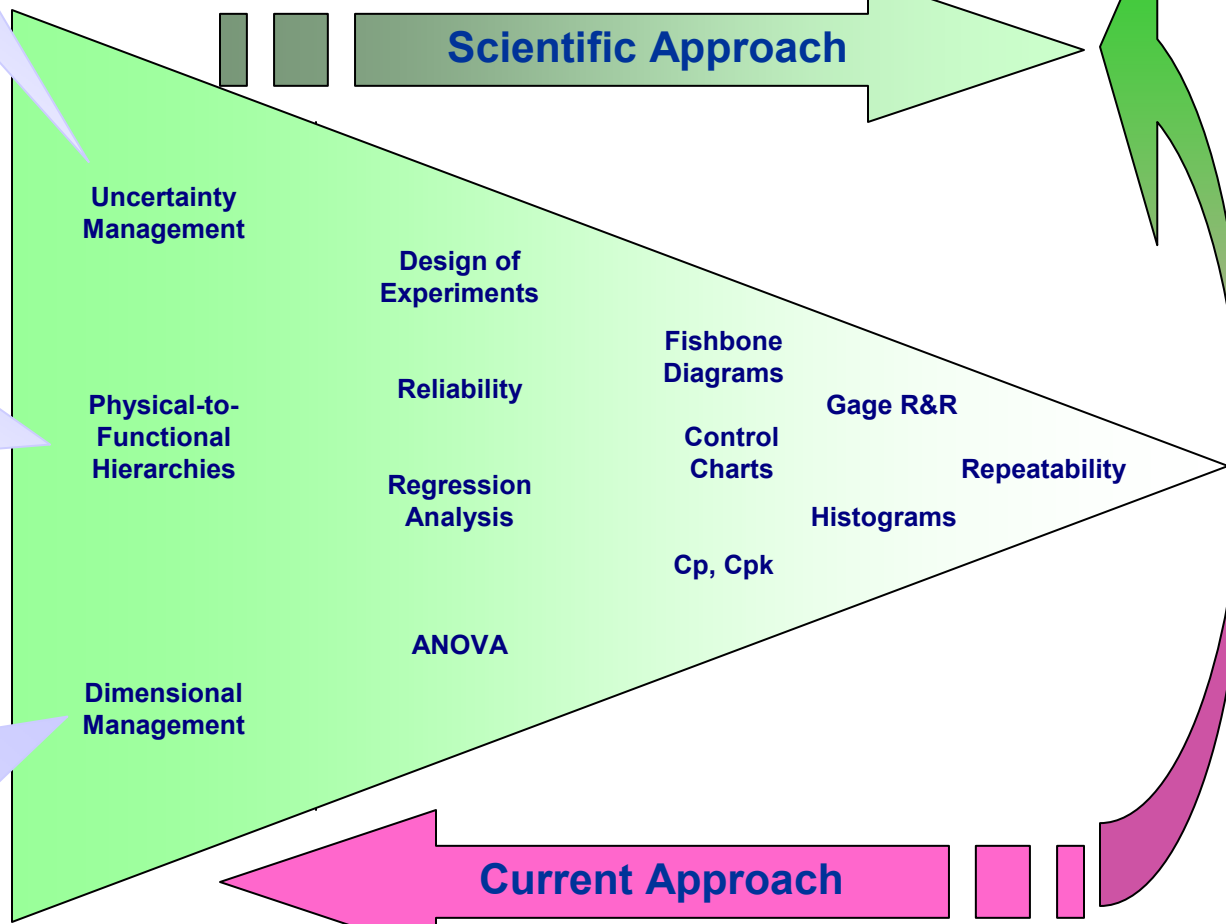
software for realization of measurement

Distance Equation: $d = \sqrt{a^2 + b^2 + c^2} = \sqrt{a^2 + b^2 + c^2 + 2ab \cos(\gamma)}$

Objective Function: $A(x,y) = \sum_{i=1}^n (x_i - y_i)^2$



Scientific Approach



Current Approach

Transformation