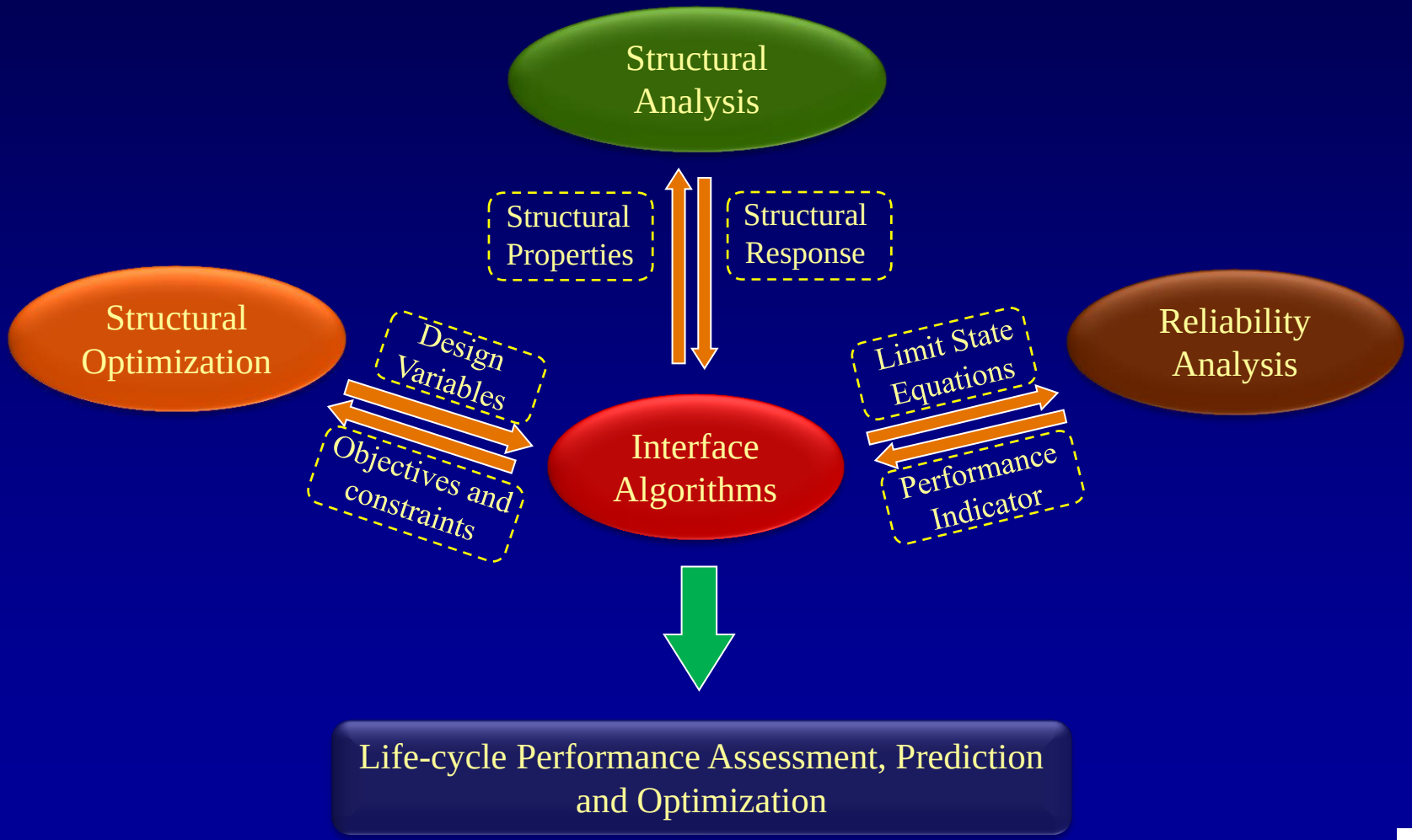
Computational Laboratory for Life-cycle Structural Engineering

The room A 140 in Imbt Lab. is dedicated to the Computational Laboratory for Life-Cycle Structural Engineering, established in 2006. It consists of:

- Six Dell OptiPlex 990 main desktops equipped with Core i7-2600 3.4 GHz (up to 3.8 GHz) quad core processors, 8 GB of memory, and 500 GB hard drives.
- Dual core (Intel Core2-6600 @ 2.4 GHz) desktop serving for meetings and presentation purposes.
- Rack-type life-cycle computational server which is capable of speedily performing heavy-duty computational tasks.
- Dell Precision workstation (T7400) with two quad core Intel Xeon E5410 processors having a clock speed of 2.33 GHz and memory of 16 GB.
- Dell workstation (Precision R5500n) equipped with two six cores X5675 Intel Xeon processors with 3.06 GHz clock speed, 24 GB DDR3 Memory, Dual 256 MB NVIDIA Quadro graphics card, dual redundant power supply, and two 500 GB-7200 RPM hard drives.

The interaction among the computational tasks used in life-cycle analysis/prediction and the integrated life-cycle management framework are presented next.

Interaction among Computational Tasks



Life-cycle Management Framework

OPTIMAL DECISIONS

Structural performance assessment and prediction

Updating predictions

Optimum maintenance and management strategies

Information from inspection and structural health monitoring