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Novel and Efficient Thermal Error Reduction Strategy For Machine Tool Performance Improvement

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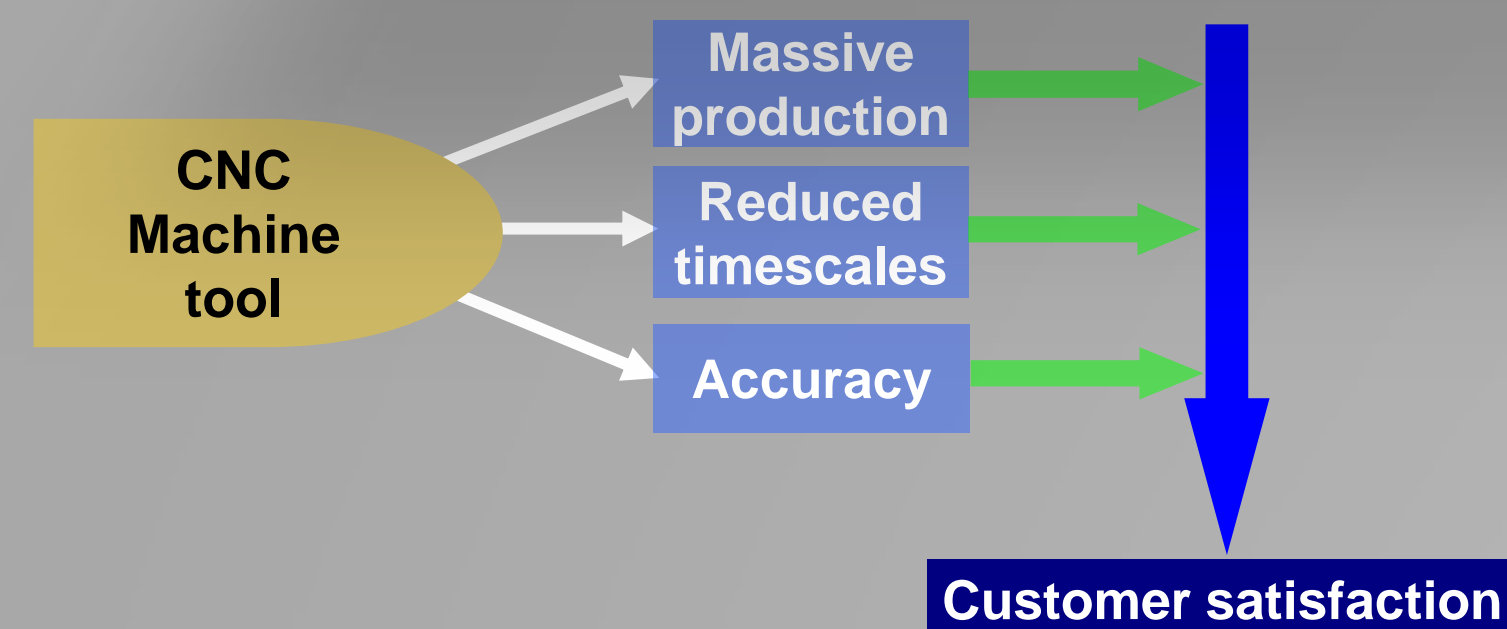
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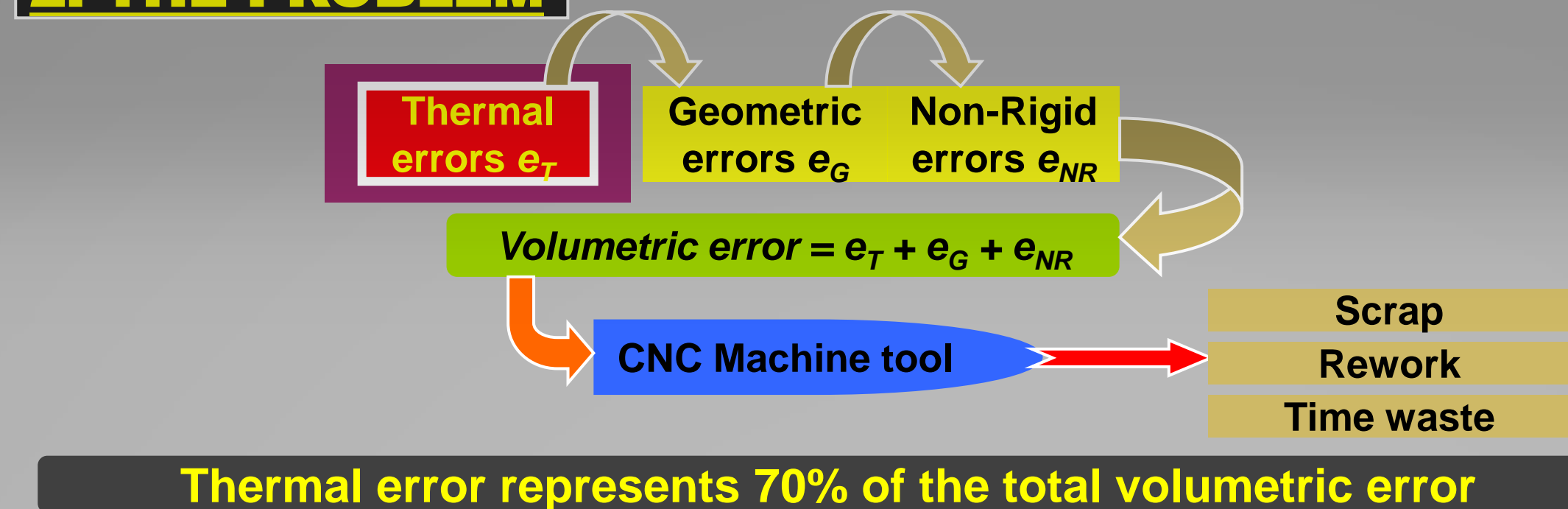
NOVEL AND EFFICIENT THERMAL ERROR REDUCTION STRATEGY FOR MACHINE TOOL PERFORMANCE IMPROVEMENT

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1. INTRODUCTION

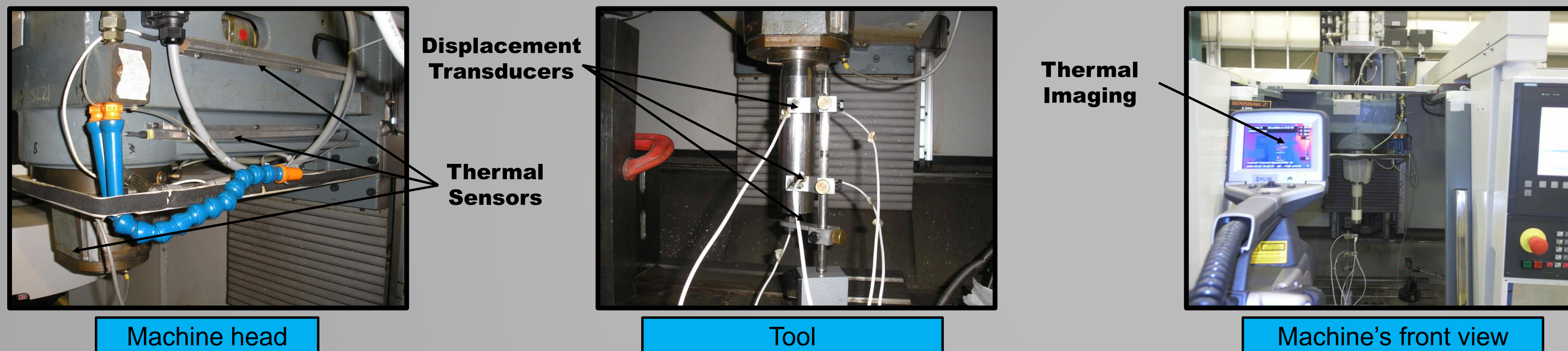


2. THE PROBLEM

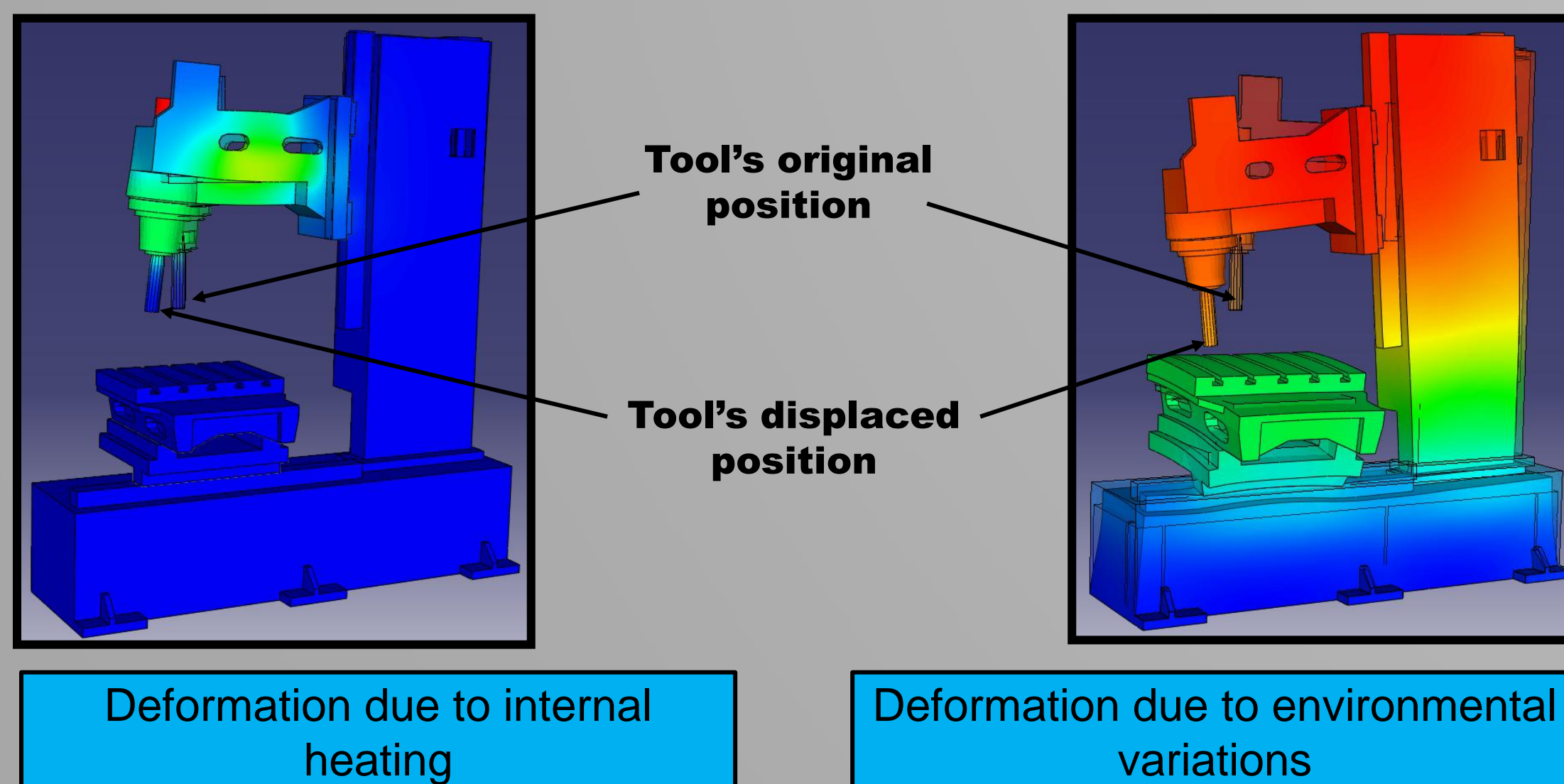


4. THERMAL ANALYSIS

4.1 EXPERIMENTAL MACHINE TESTING - ONLINE ANALYSIS

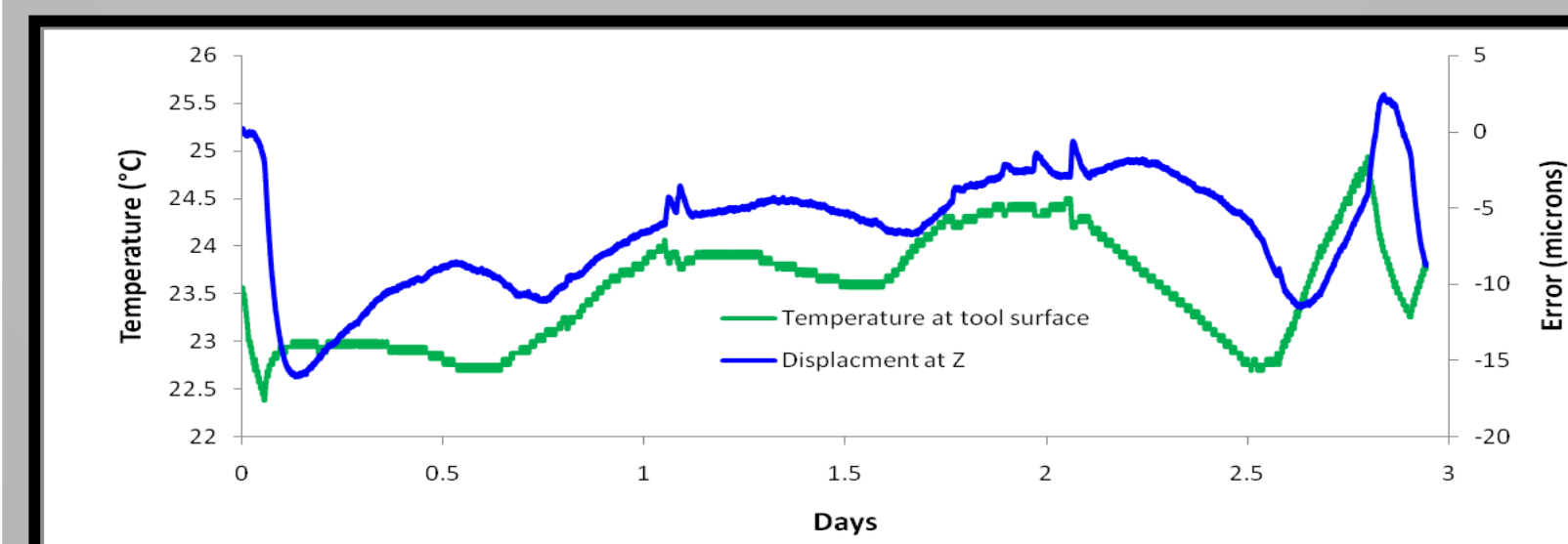


4.2 FINITE ELEMENT ANALYSIS (FEA) - OFFLINE ANALYSIS

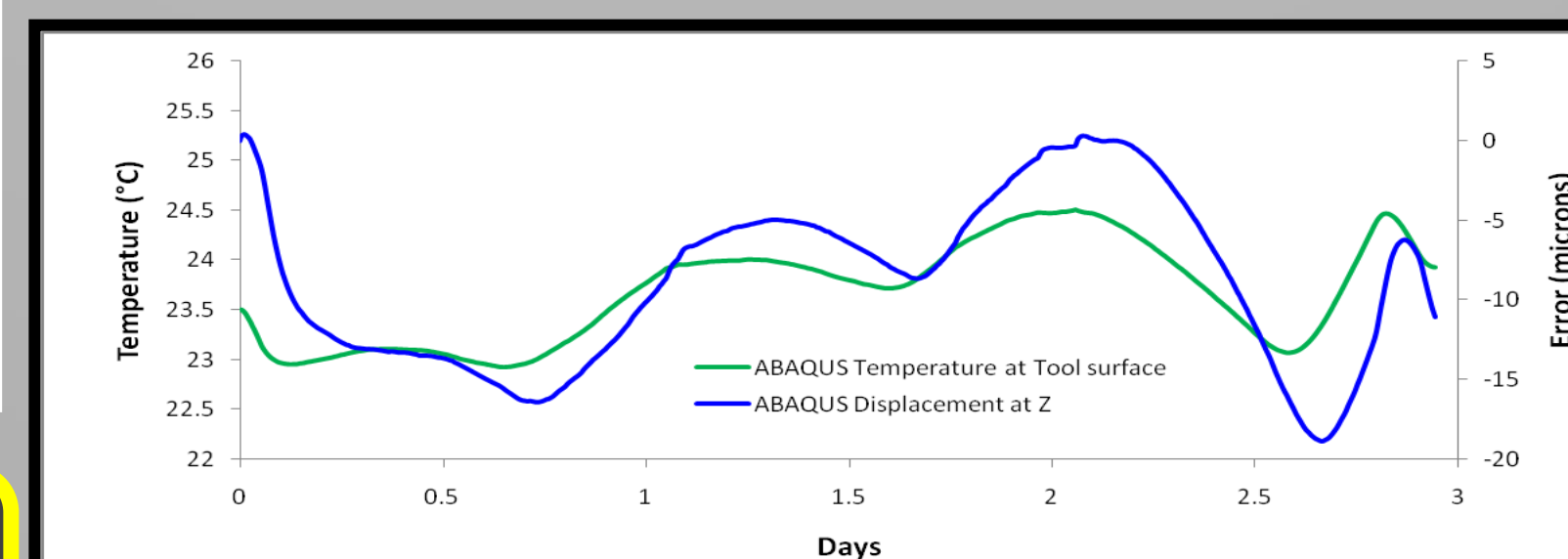


70% to 86% correlation achieved in experimental and FEA simulated displacement results

5. RESULTS

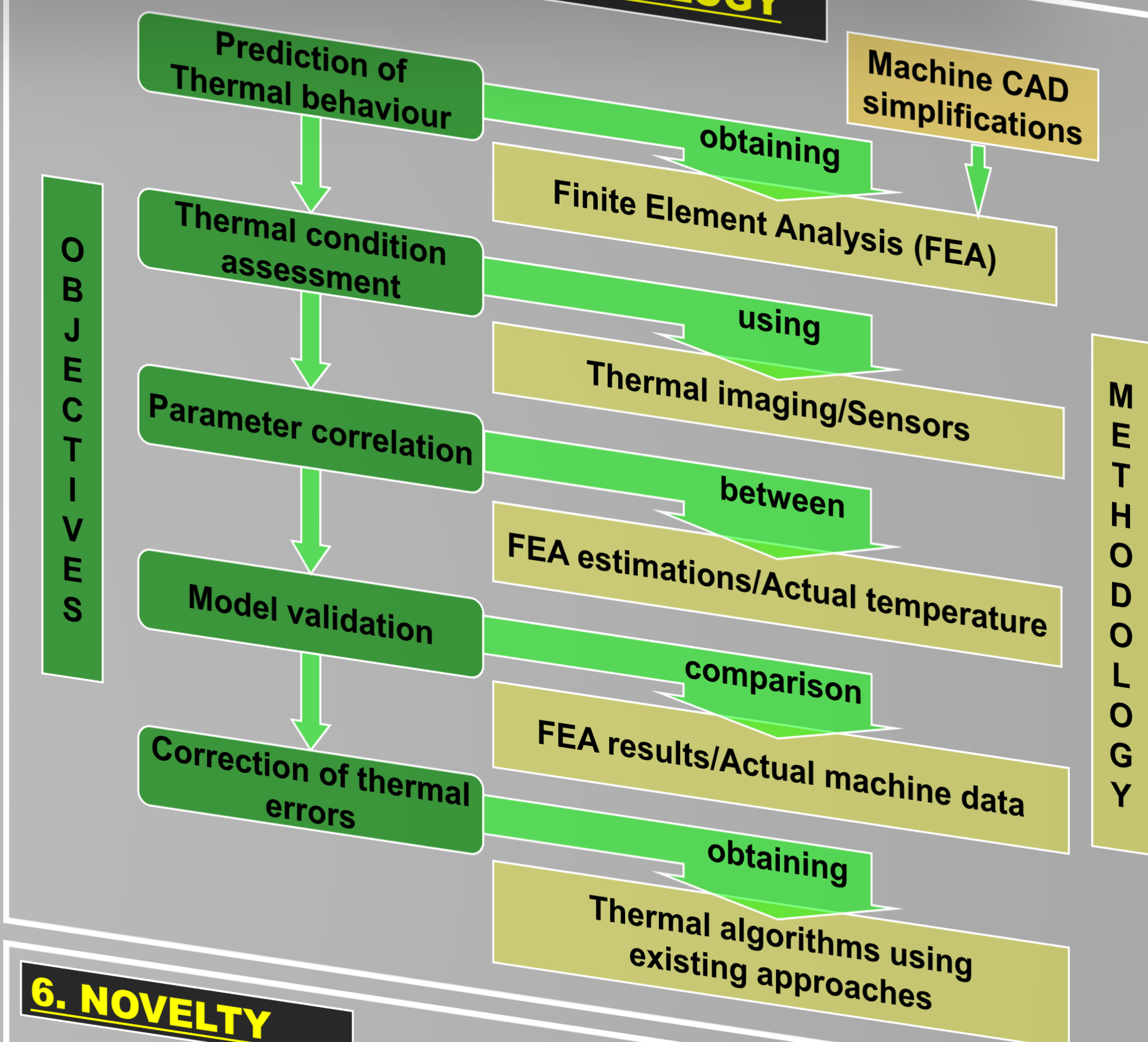


Experimental temperature and displacement profiles



Simulated temperature and displacement profiles

3. OBJECTIVES AND METHODOLOGY



6. NOVELTY

