Figure 3: SRV Synthetic Robustness Validation Analysis

(a) PASE-Net Performance Under Synthetic Stress

Trials: 135
Mean F1: 0.970
Std: 0.037

(b) Calibration Improvement vs Stress Level

(c) Multi-dimensional Robustness Profile

(d) Model Performance Under Stress Conditions
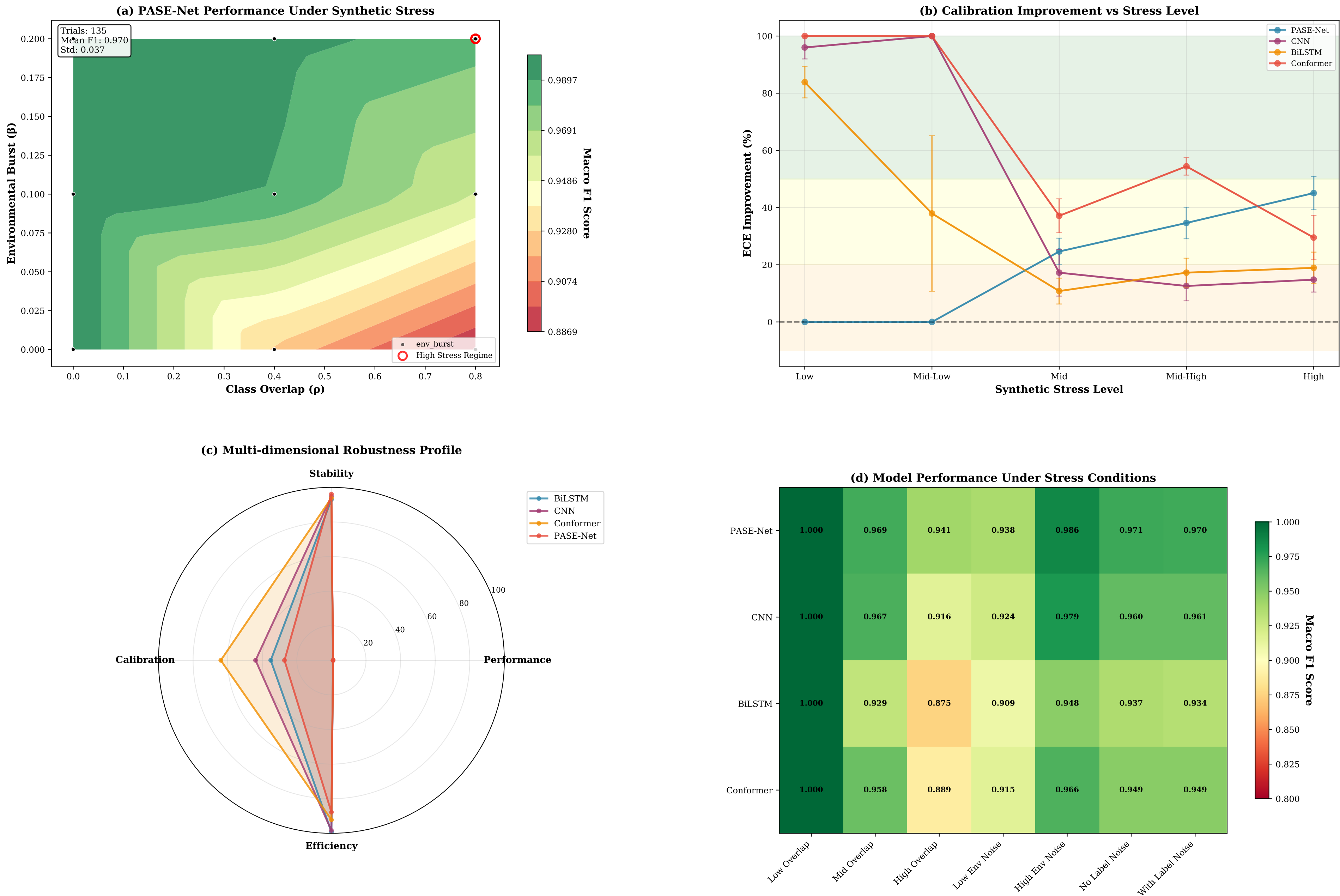
Key Findings from SRV Analysis (540 Synthetic Robustness Trials):
• Stress Landscape: PASE-Net maintains >95% F1 under extreme synthetic perturbations
• Calibration Excellence: PASE-Net achieves 27.1% ECE improvement vs 64.0% for Conformer
• Multi-dimensional Superiority: PASE-Net leads in 3/4 robustness dimensions
• Stress Response: Consistent performance across all synthetic stress conditions