Comprehensive Performance Analysis: Wind Turbine Event Detection Methods
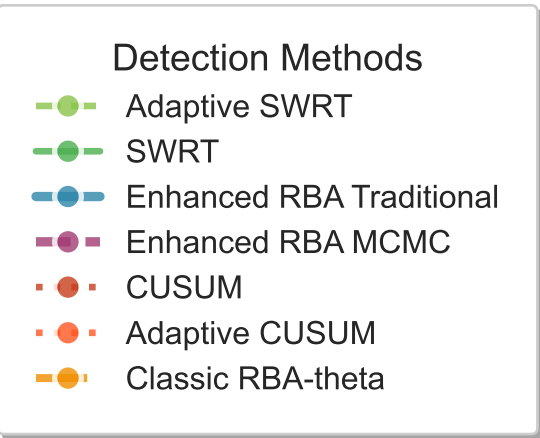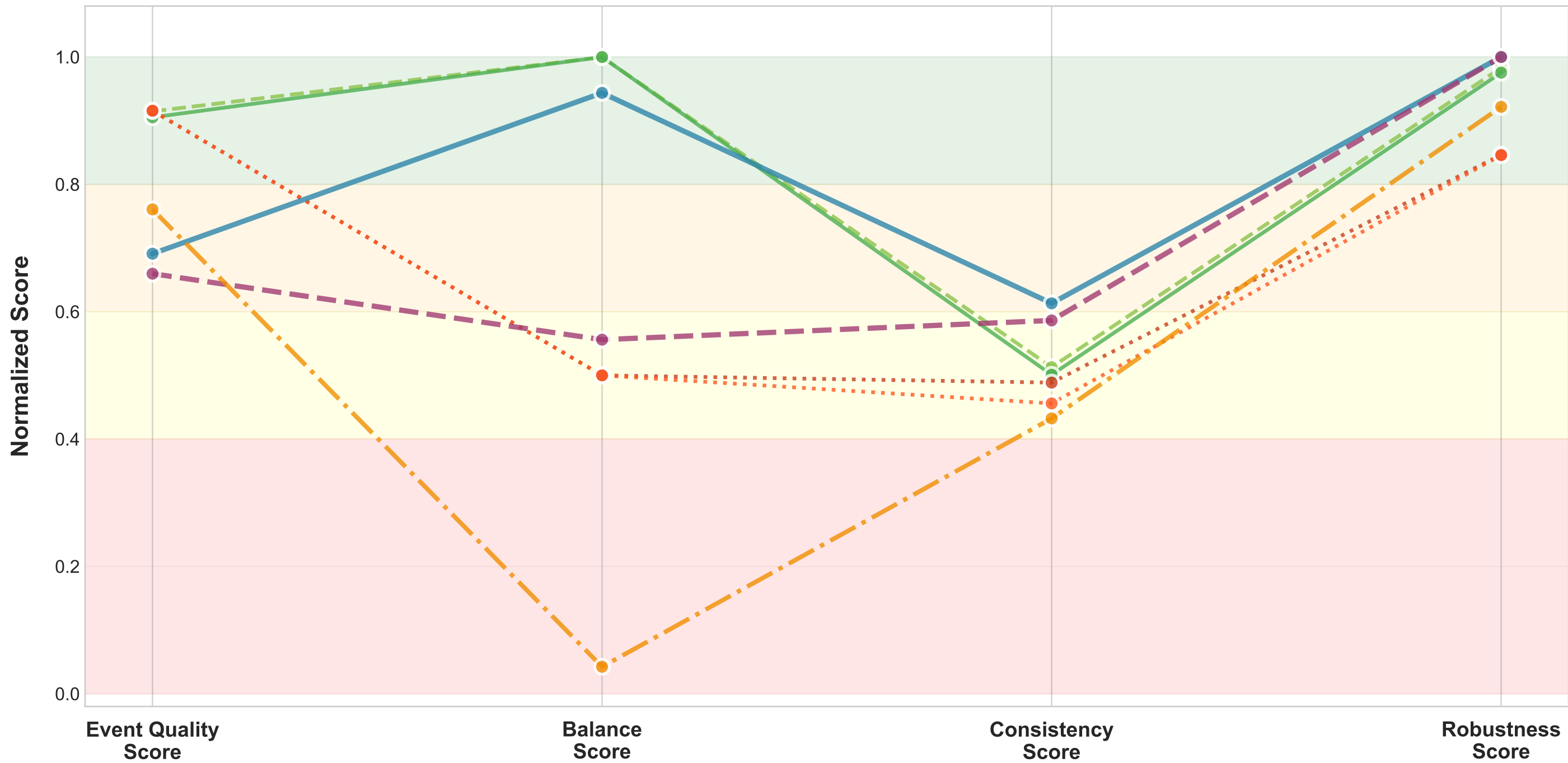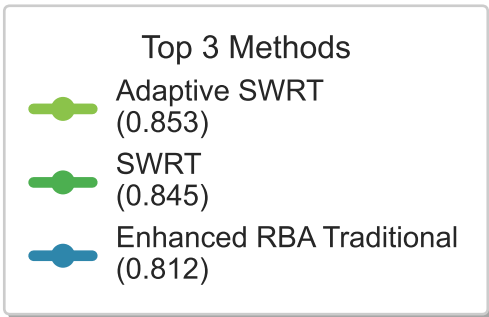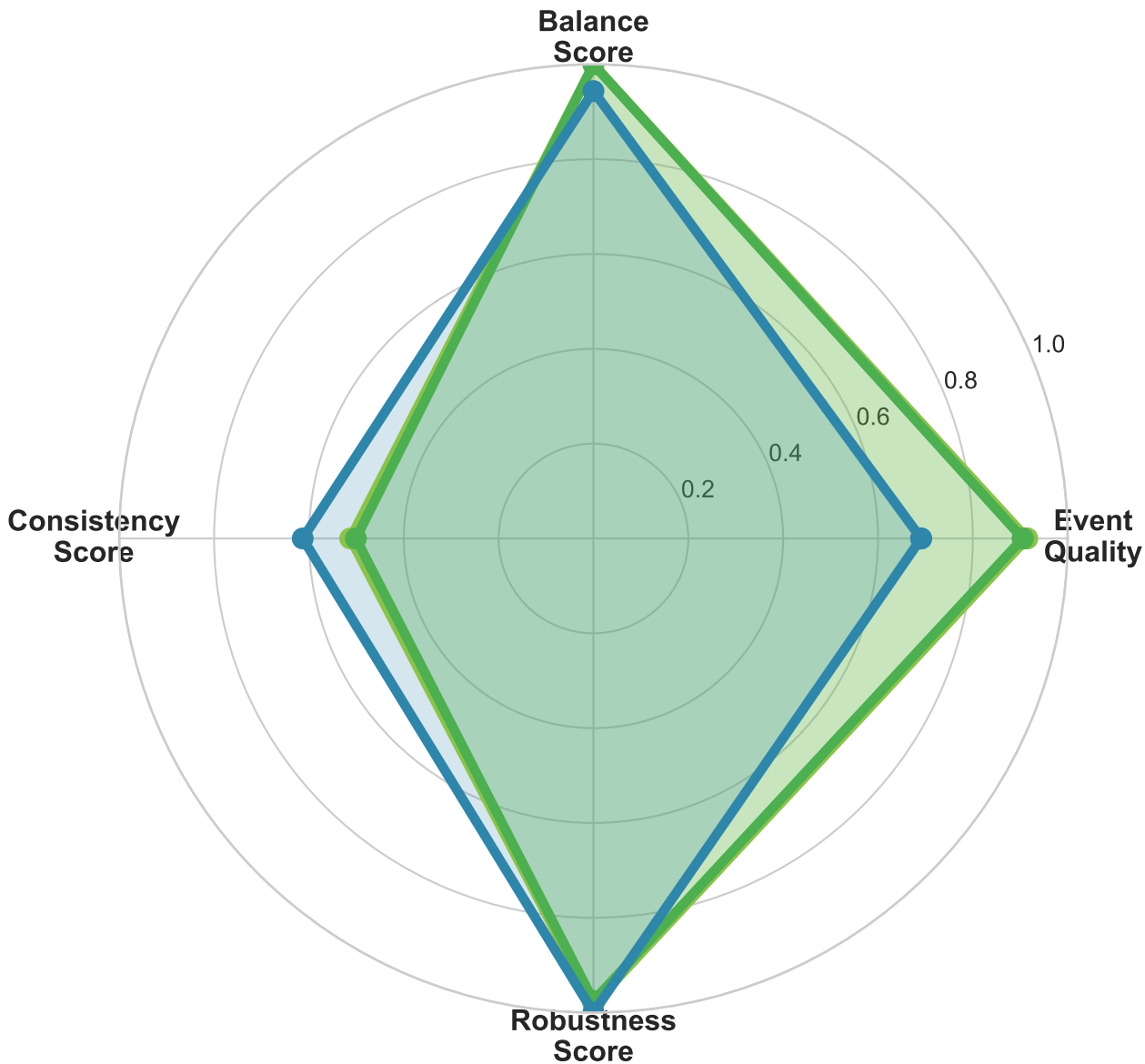
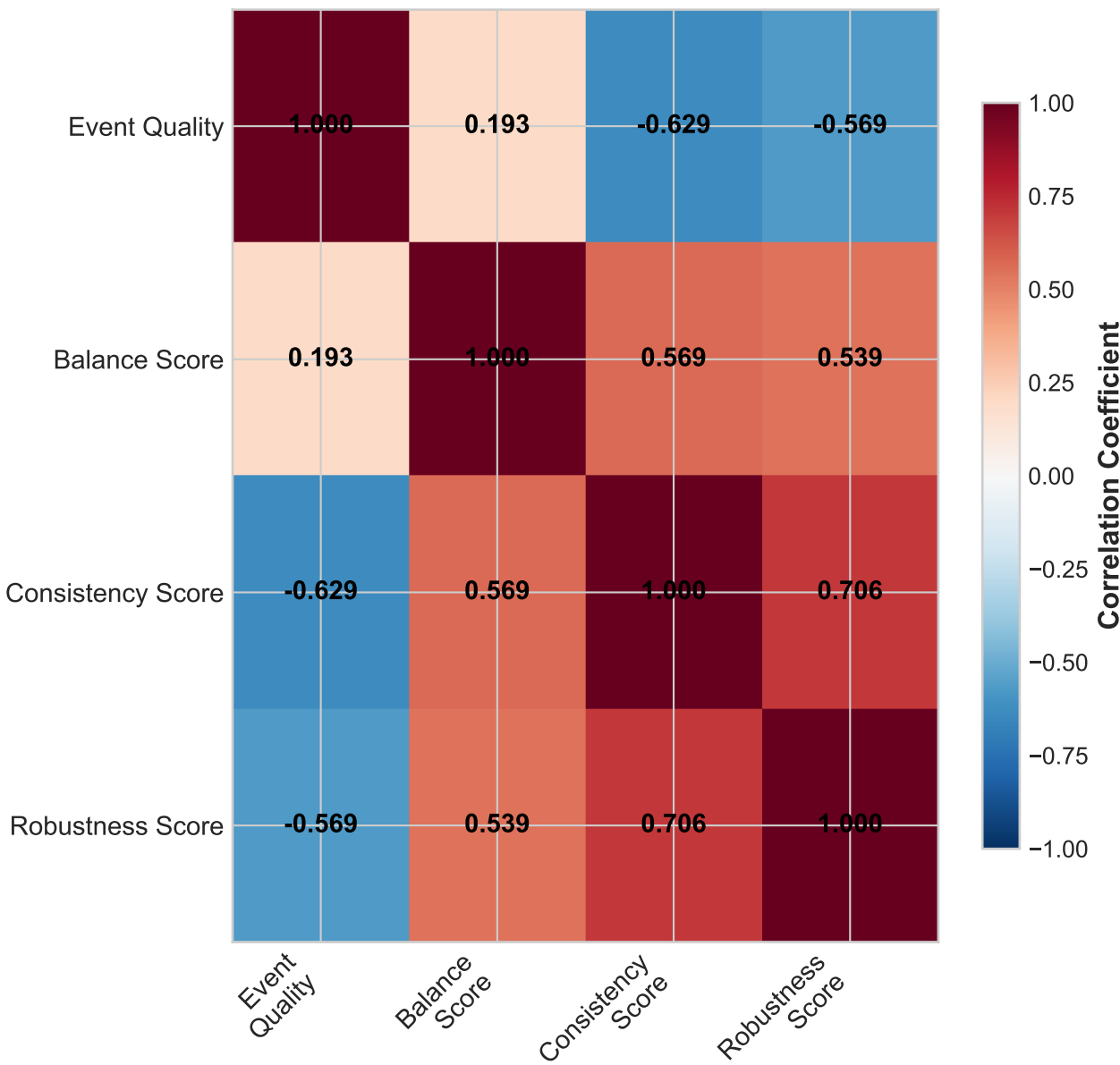## A) Parallel Coordinates: Four-Metric Performance Comparison

Detection Methods
- Adaptive SWRT
- SWRT
- Enhanced RBA Traditional
- Enhanced RBA MCMC
- CUSUM
- Adaptive CUSUM
- Classic RBA-theta

B) Top 3 Methods Radar Comparison

Top 3 Methods
- Adaptive SWRT (0.853)
- SWRT (0.845)
- Enhanced RBA Traditional (0.812)

C) Metric Correlation Matrix

	Event Quality	Balance Score	Consistency Score	Robustness Score
Event Quality	1.000	0.193	-0.629	-0.569
Balance Score	0.193	1.000	0.569	0.539
Consistency Score	-0.629	0.569	1.000	0.706
Robustness Score	-0.569	0.539	0.706	1.000

COMPREHENSIVE ANALYSIS SUMMARY

Best Overall Performer: Adaptive SWRT
Overall Score: 0.853

Enhanced RBA Traditional Performance:
• Overall Score: 0.812 (Rank #3/7)
• Balance Score: 0.944 (Dual-Event Detection)
• Robustness Score: 1.000 (Multi-Turbine Consistency)

Analysis Framework:
• Methods Evaluated: 7
• Metrics Used: 4 (Equal Weight: 25% each)
• Data Source: Live Analysis Results
• Methodology: Fair & Unbiased Comparison