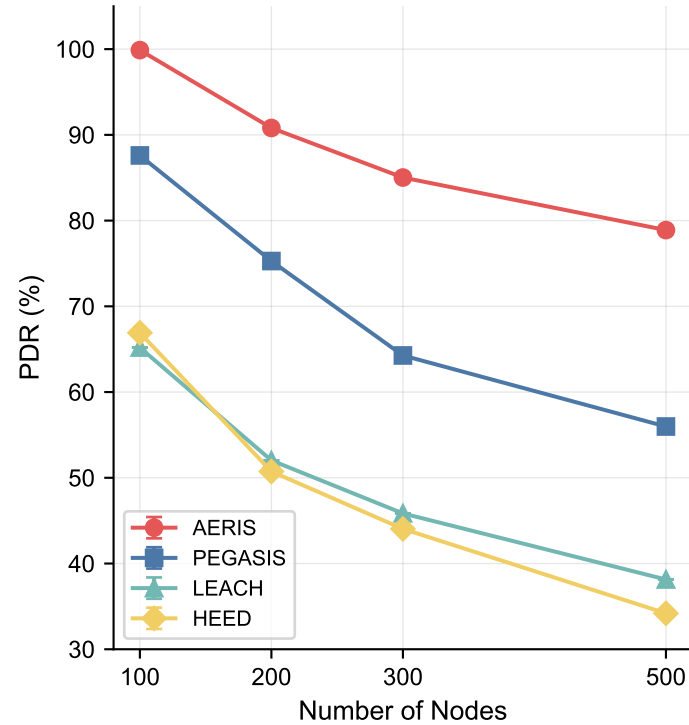# AERIS Protocol Performance Comparison
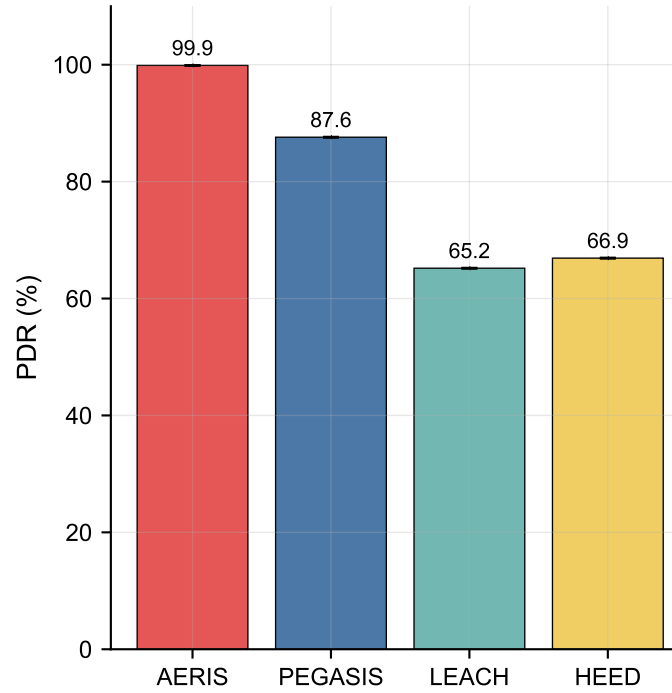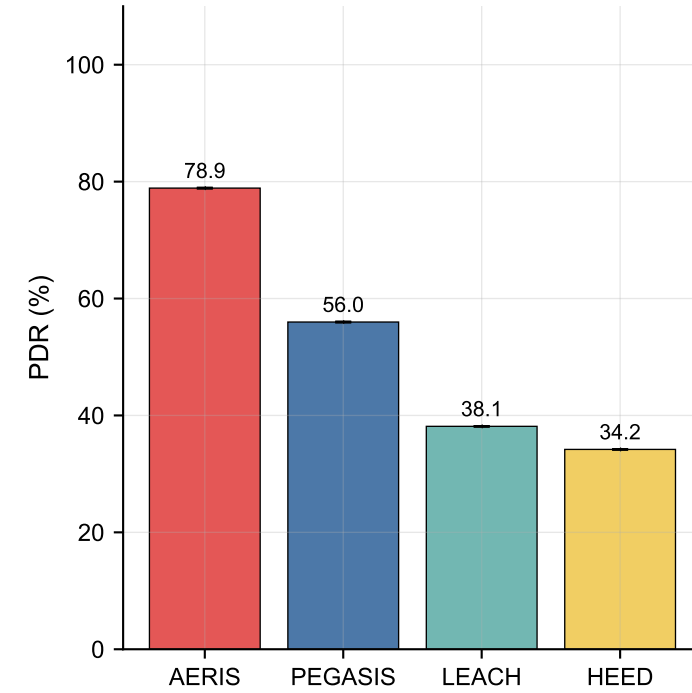

(a) PDR vs Network Scale
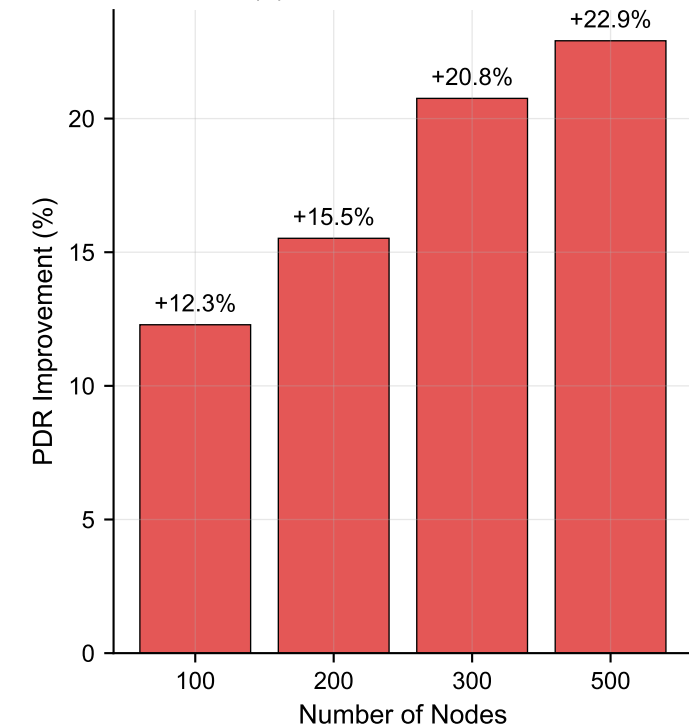
(b) 100 Nodes
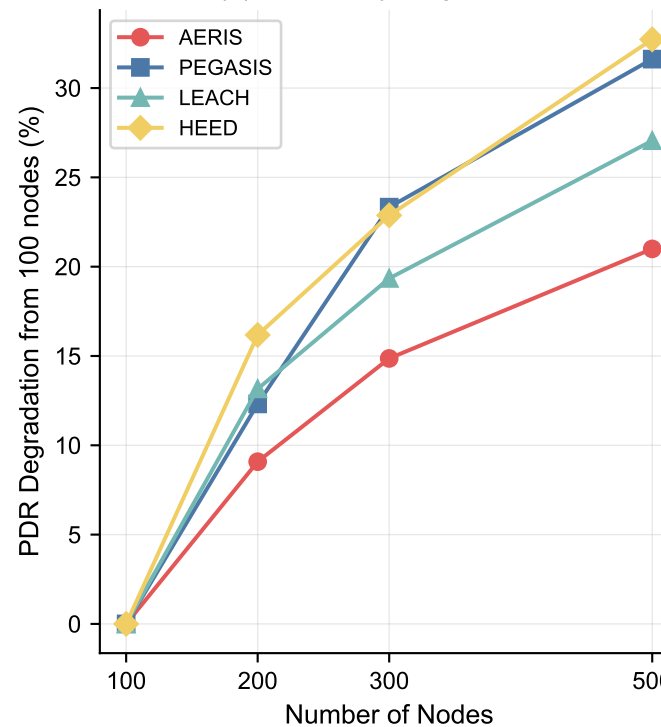- AERIS: 99.9
- PEGASIS: 87.6
- LEACH: 65.2
- HEED: 66.9

(c) 500 Nodes
- AERIS: 78.9
- PEGASIS: 56.0
- LEACH: 38.1
- HEED: 34.2

(d) AERIS vs PEGASIS
- 100: +12.3%
- 200: +15.5%
- 300: +20.8%
- 500: +22.9%

(e) Scalability Degradation

(f) Summary

```
Statistical Summary
==============================

AERIS Advantages:
  100 nodes: +12.3% vs PEGASIS
  200 nodes: +15.5% vs PEGASIS
  300 nodes: +20.8% vs PEGASIS
  500 nodes: +22.9% vs PEGASIS

Experimental Setup:
  Replicates: 60 per config
  Rounds: 1000
  Channel: Log-normal (σ=8dB)
  Energy: CC2420 model
```