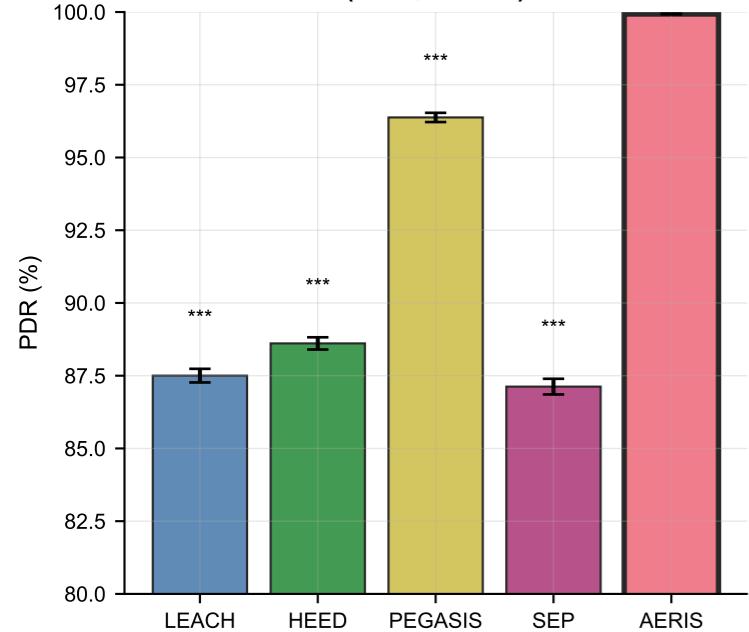
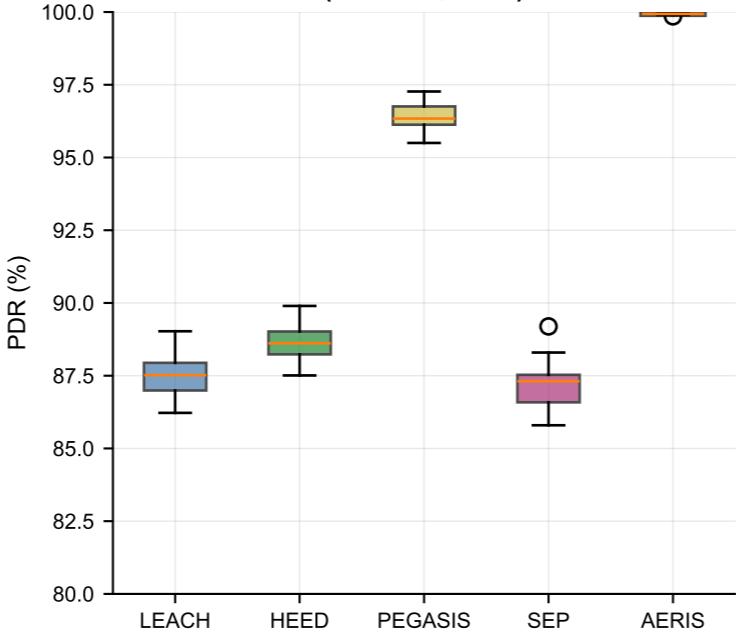


AERIS: SOTA Protocol Comparison with Rigorous Statistical Testing
 (Fair comparison: all protocols use identical channel models, n=30 runs each)

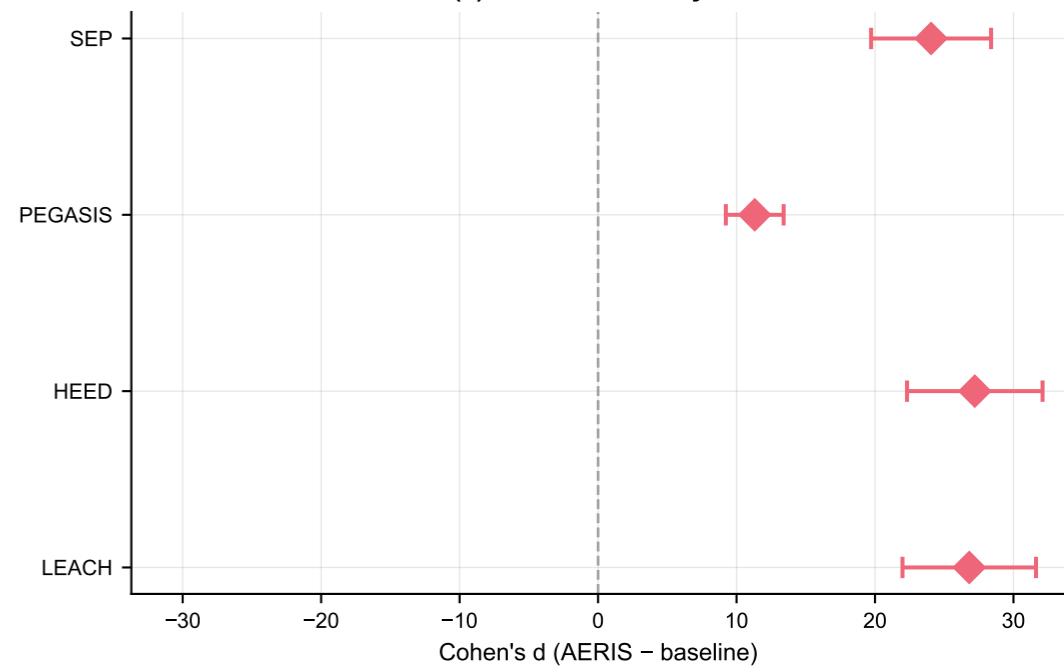
**(a) Protocol PDR Comparison
(n=30, 95% CI)**



**(b) PDR Distribution
(Box Plot, n=30)**

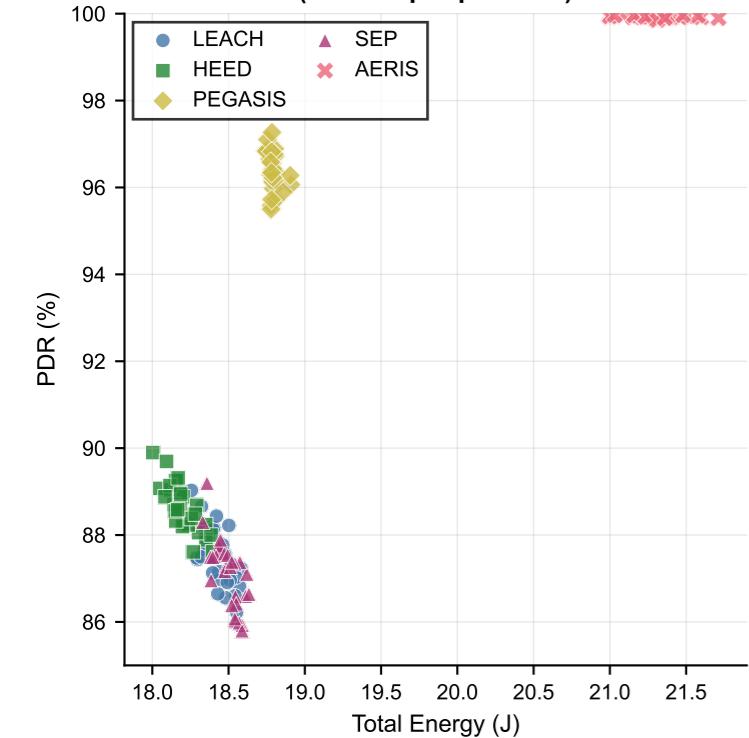


(c) Effect Size Analysis

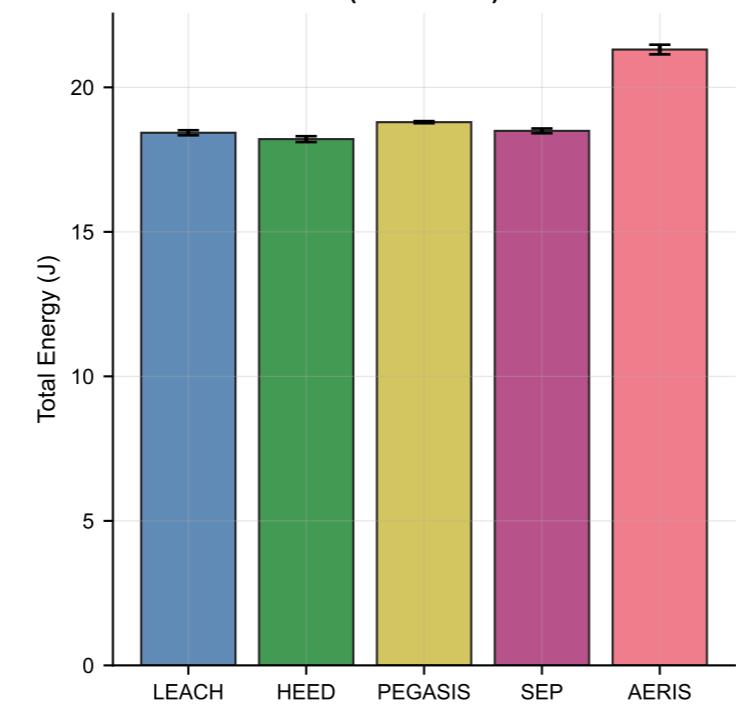


Positive favors AERIS

**(d) PDR–Energy Trade-off
(30 runs per protocol)**



**(e) Energy Consumption
(Mean ± SD)**



**(f) Statistical Validation Summary
(Shapiro-Wilk → Levene → t-test)**

Baseline	Test	p	d	Outcome
LEACH	Welch's t-test	1.0e-38	26.81	AERIS wins
HEED	Welch's t-test	6.2e-39	27.21	AERIS wins
PEGASIS	Welch's t-test	5.6e-28	11.31	AERIS wins
SEP	Welch's t-test	2.5e-37	24.05	AERIS wins