BMP390 - 7 November 2026 20 h 40 min Follow-up Observation

STATUS: Exploratory analysis of independent ARAS measurements. No confirmed geophysical, volcanic, meteor, or infrasonic source.

Period (UTC)	06 Nov 21:53:38 - 07 Nov 18:34:08
Period (Istanbul, UTC+3)	07 Nov 00:53:38 - 21:34:08
Instrument / data	Pico H + BMP390; 744,302 recorded samples; nominal 10 Hz
Pressure change	1018.9342 to 1024.9270 hPa; +5.9928 hPa
Quality	0 sequence gaps; 0 empty 1-second bins; host timing jitter disclosed
Peak candidate	17:14:58 Istanbul; +20.85 Pa relative to local baseline; unverified

Executive interpretation

Station pressure increased substantially throughout the follow-up period. This slow trend is consistent with changing weather conditions but does not uniquely identify its cause. Short-period fluctuations were markedly stronger than in the preceding 23.33-hour baseline record. The change is real in the recorded data; atmospheric source attribution is not established.

Data integrity and methods

The 10 Hz raw recording was retained unchanged. Anomaly screening uses measured-only 1 s averages, a centered 10 s average minus a centered 600 s median, and a robust MAD-based adaptive threshold. Nearby threshold exceedances (up to 30 s apart) were grouped; groups at least 9 s long are candidate clusters, not confirmed physical events.

Power spectral density: Welch method, 2048 s Hann windows, 1024 s step, linear detrending. Only windows containing measured 1 s bins were used; no missing bins were interpolated. The derived 1 Hz spectral products cover frequencies up to 0.5 Hz.

Comparison with the previous observation

Metric	Previous 23.33 h	New 20.67 h
Pressure change	-2.9508 hPa	+5.9928 hPa
Robust 10 s residual scale	0.714 Pa	1.365 Pa (1.91x)
99th percentile |residual|	4.187 Pa	8.064 Pa
Adaptive candidate clusters	37	37
Clusters using old fixed threshold	37	195

An identical number of adaptive candidates does not imply identical conditions: each record has a different estimated noise floor. The 195 fixed-threshold clusters are screening statistics, not independent verified atmospheric events.

Band-limited pressure variability

Period band	Previous RMS	New RMS	Ratio
100-300 s	0.579 Pa	1.099 Pa	1.90x
10-100 s	0.811 Pa	1.918 Pa	2.37x
2.5-10 s	0.273 Pa	0.418 Pa	1.53x

Selected candidate peaks (not source-verified)

Peak time (Istanbul)	Local residual	Threshold cluster
17:14:58	+20.85 Pa	15 s
11:32:12	+16.49 Pa	13 s
17:00:10	+15.67 Pa	68 s
14:35:23	+14.57 Pa	12 s

Cautions and limitations

The sensor is housed locally and is affected by its pressure inlet, wind, mounting, and thermal environment. A pressure pulse persisting for several samples is not automatically an infrasound detection. Discriminating weather, local artifacts and distant events would require independent environmental evidence and instrument characterization. Sensor temperature is not calibrated ambient-air temperature.

Source: independent ARAS raw BMP390 CSV recorded in Istanbul, 7 November 2026. For exact algorithms, all selected candidate times, full-resolution figures and verified raw file hash, see the website package accompanying this report.

MEASURED-DATA FIGURES / 1 OF 8

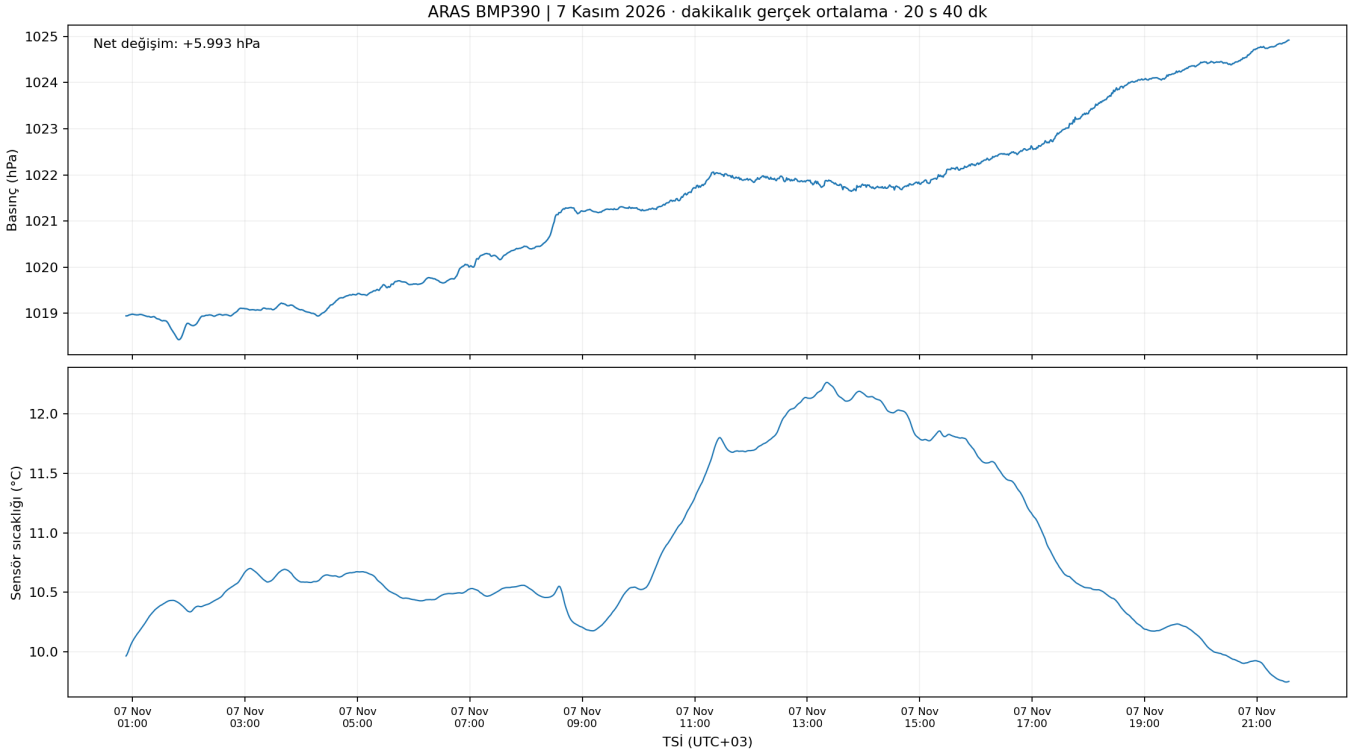


Figure 1. Station-pressure and onboard sensor-temperature traces; genuine measured values.

Derived figure from genuine ARAS observations; no synthetic event structures or interpolation.

MEASURED-DATA FIGURES / 2 OF 8

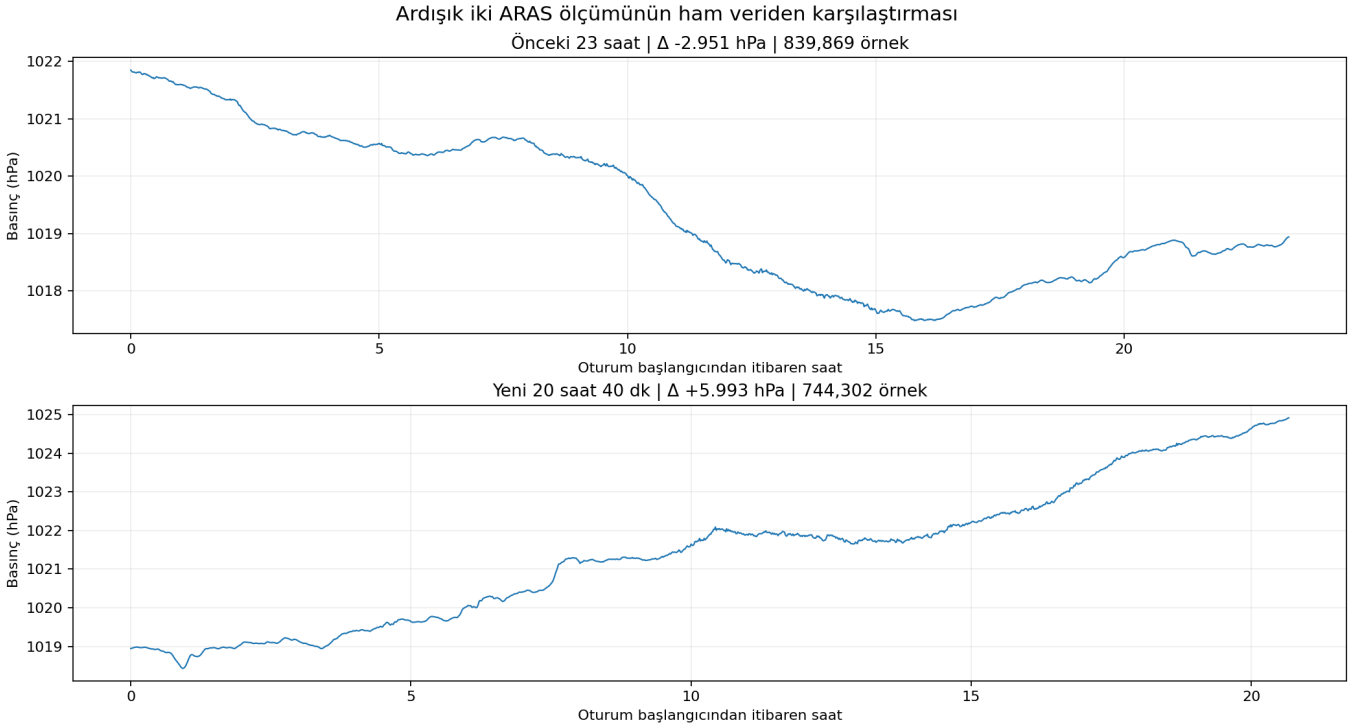


Figure 2. Consecutive pressure-record comparison.

Derived figure from genuine ARAS observations; no synthetic event structures or interpolation.

MEASURED-DATA FIGURES / 3 OF 8

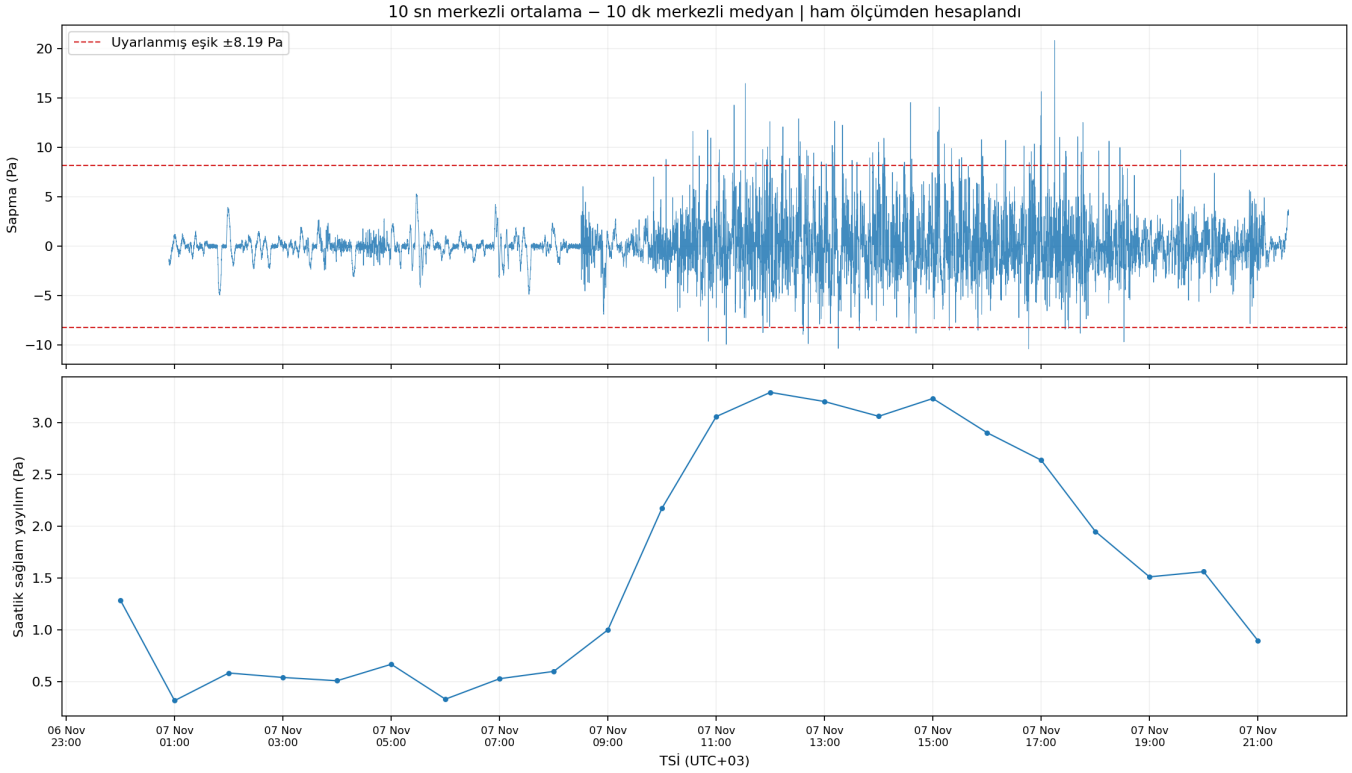


Figure 3. Short-period residuals and robust noise scale.

Derived figure from genuine ARAS observations; no synthetic event structures or interpolation.

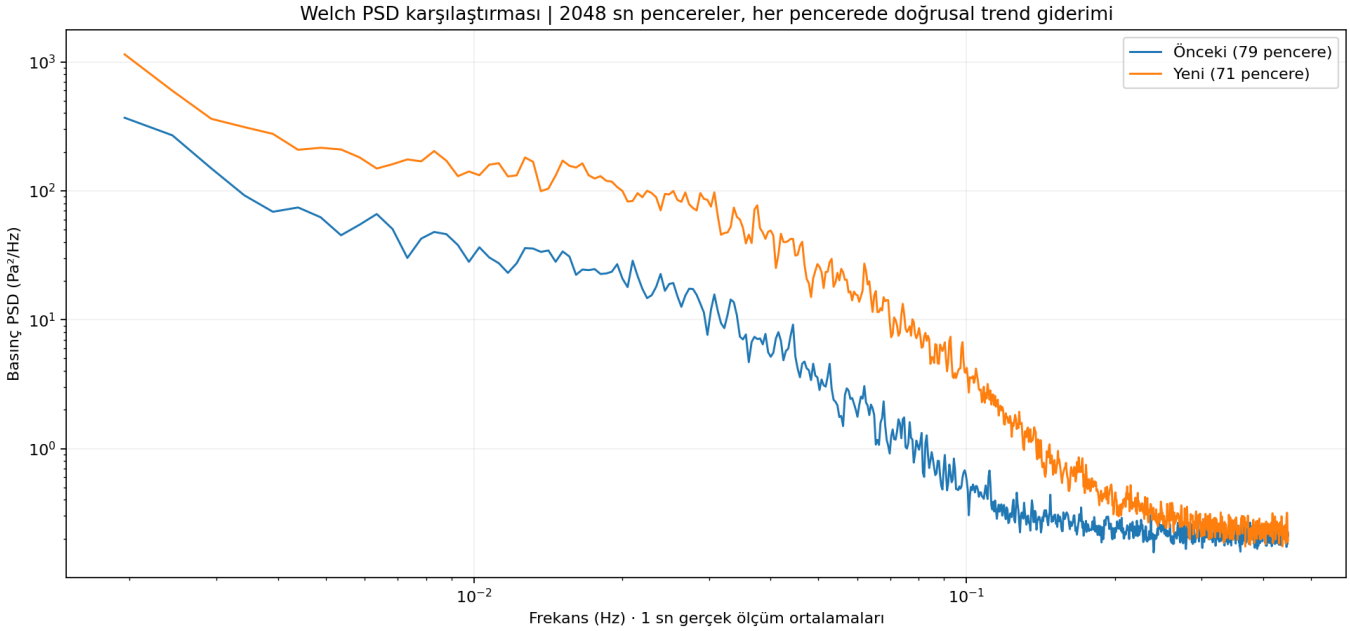


Figure 4. Measured pressure PSD: old vs new observation windows.

Derived figure from genuine ARAS observations; no synthetic event structures or interpolation.

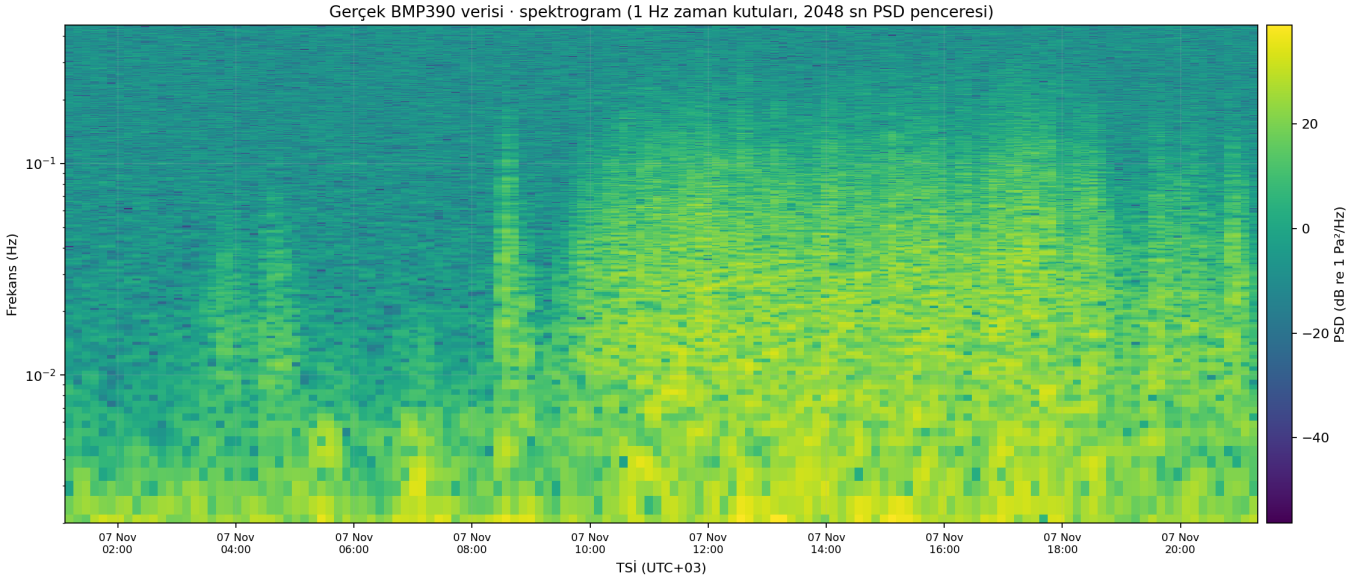


Figure 5. Time-period pressure spectrogram derived only from measured 1 Hz bins.

Derived figure from genuine ARAS observations; no synthetic event structures or interpolation.

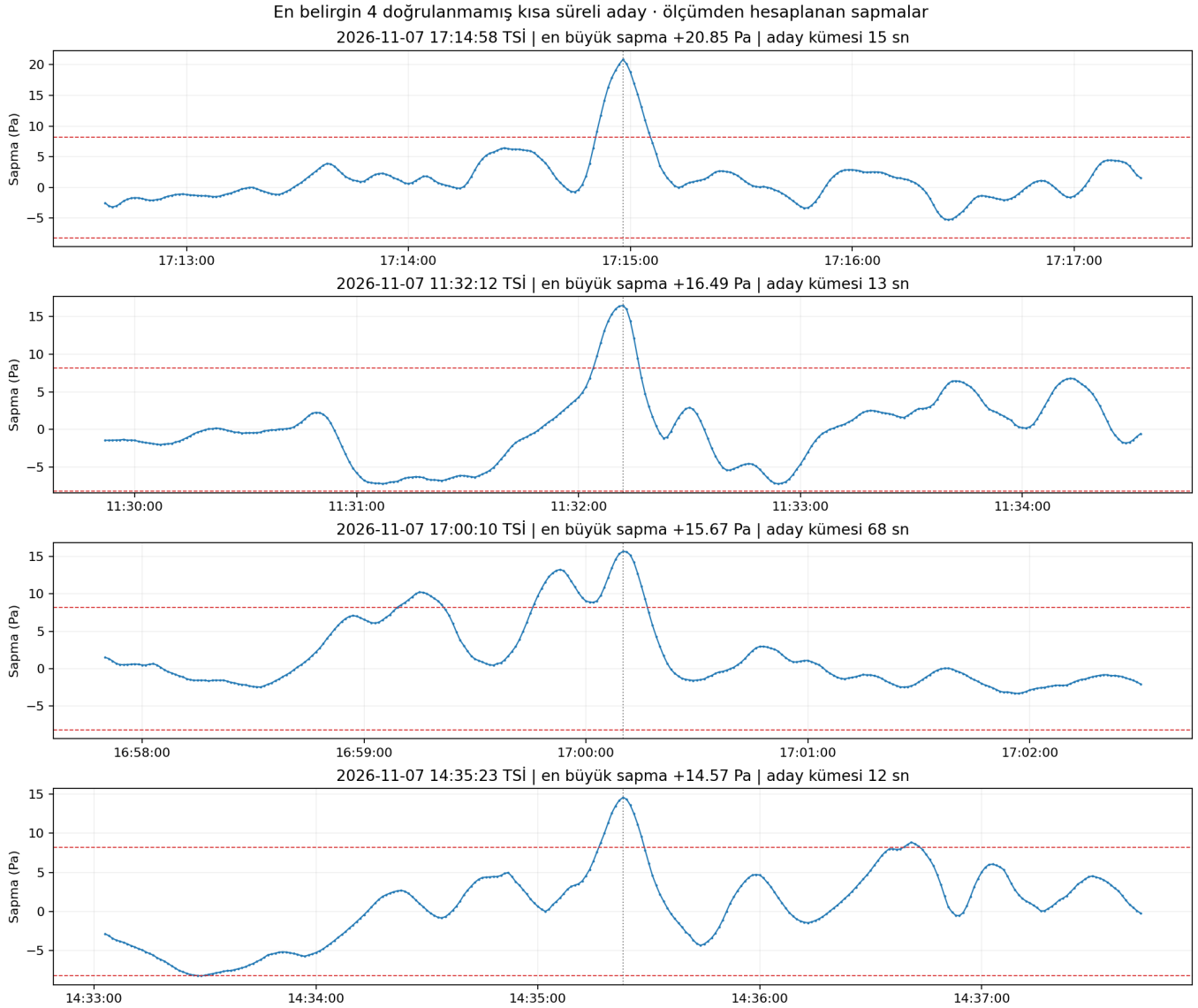


Figure 6. Four strongest unverified residual candidate clusters.

Derived figure from genuine ARAS observations; no synthetic event structures or interpolation.

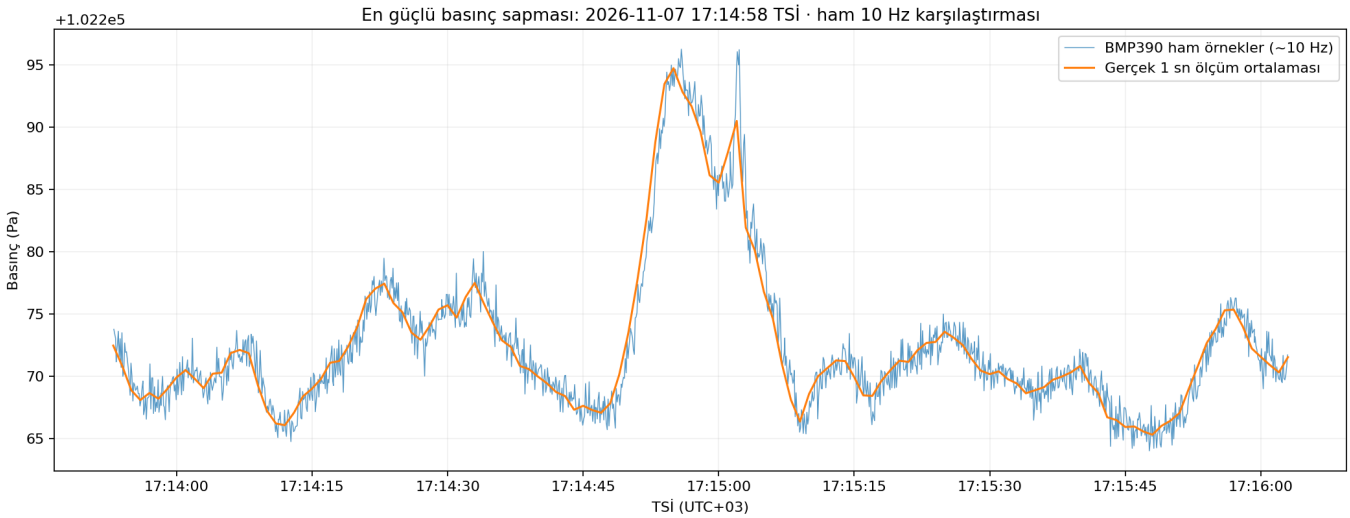


Figure 7. Full 10 Hz measured data near the strongest candidate.

Derived figure from genuine ARAS observations; no synthetic event structures or interpolation.

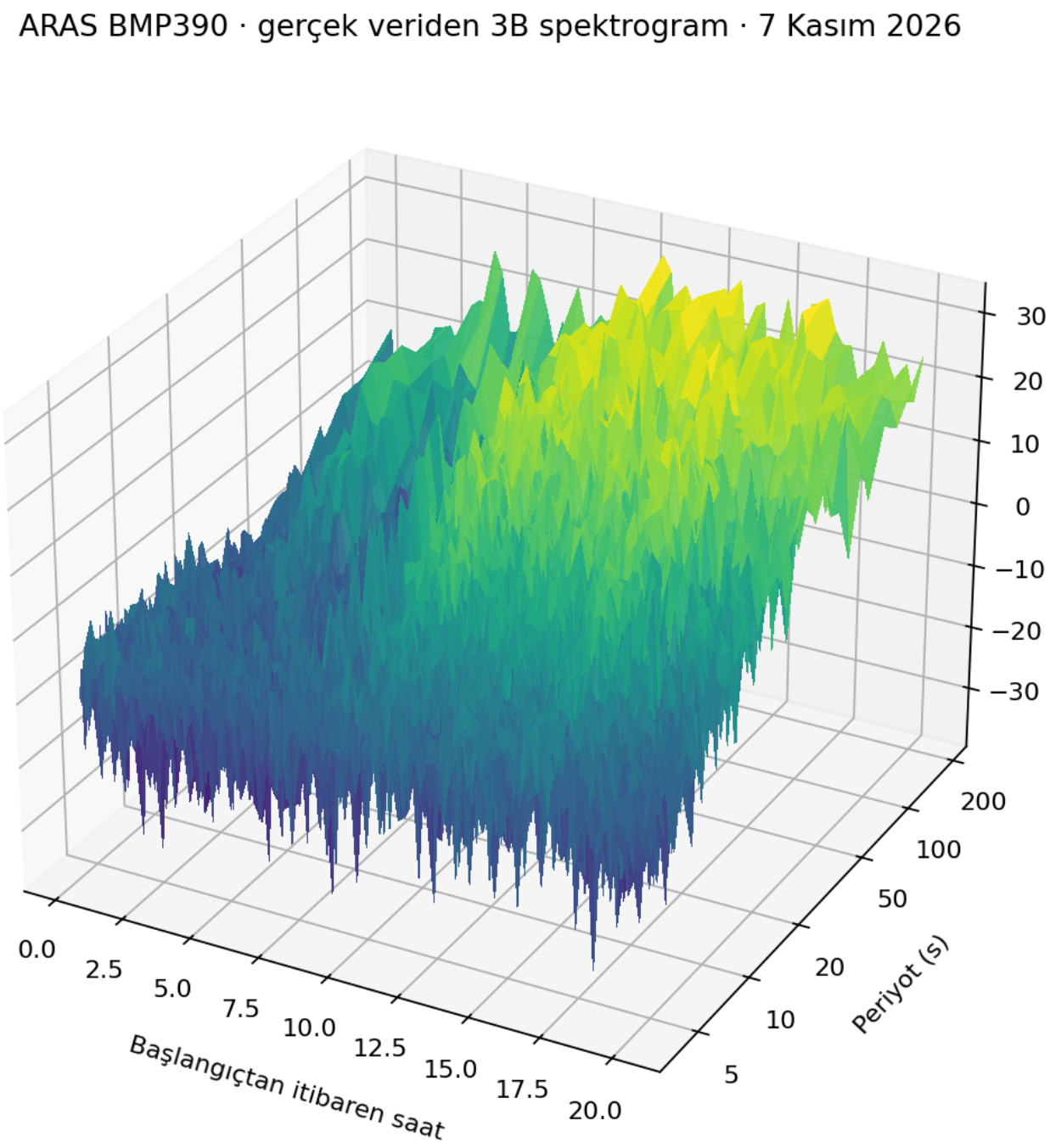


Figure 8. 3D visualization of measured-only spectral products.

Derived figure from genuine ARAS observations; no synthetic event structures or interpolation.