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Dust radiative effects and impact on energy production over the Mediterranean Basin

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S1 Additional Table

The respective optimum TAs for each station are listed in Table S1 along with the related coordinates.

Station	Latitude	Longitude	Tilt angle (TA)
Agia Marina Xyliatou	35	33.1	29.7
Antikythera	35.9	23.3	30.38
Athens	38	23.7	31.98
Ben Salem	35.6	9.9	30.16
CUT-TEPAK	34.7	33	29.47
Cairo EMA2	30.1	31.3	25.98
Finokalia	35.3	25.7	29.93
IMS-METU-Erdemli	36.6	34.3	30.92
Lampedusa	35.5	12.6	30.08
Magurele-Inoe	44.3	26	36.77
Nicosia	35.1	33.4	29.78
Palma de Mallorca	39.6	2.6	33.20
Rome la Sapienza	41.9	12.5	34.94
Sede Boker	30.9	34.8	26.58
Thessaloniki	40.6	23	33.96
Valladolid	41.7	-4.7	34.79
Weizmann Institute	31.9	34.8	27.34

Table S1: The optimum tilt angles (TA) of the fixed-tilt systems used in the analysis for each station, as calculated using the default GSEE function. Station coordinates and TAs in the table are all in degrees.

S2 Additional figure

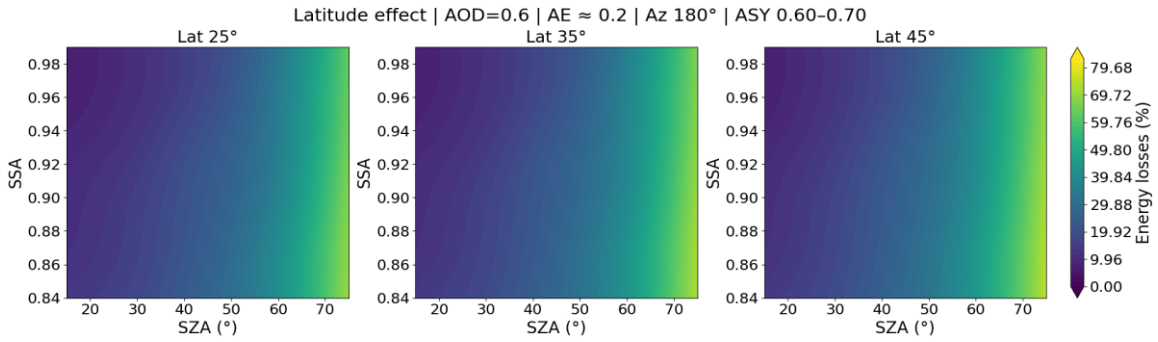

Figure S1. Sensitivity of PV energy losses (%) to latitude under fixed aerosol and geometric conditions. Results are presented for three latitudes (25°, 35°, and 45° N) for AOD = 0.6, AE ≈ 0.2, single scattering albedo varying between 0.84 and 0.99, and south-oriented PV panels (azimuth = 180°). The horizontal axis corresponds to the SZA, while the vertical axis represents SSA.

S3 Additional figure

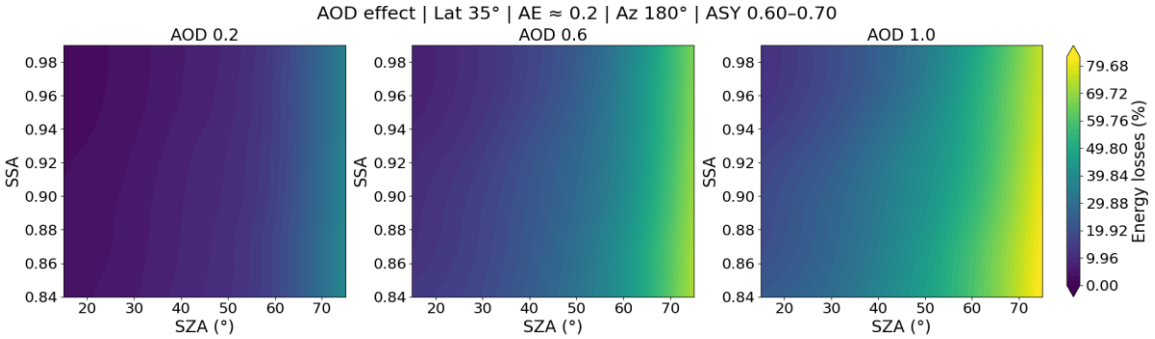

Figure S1. Sensitivity of PV energy losses (%) to aerosol optical depth (AOD = 0.2, 0.6, and 1.0) at latitude 35° N for AE ≈ 0.2 and south-oriented PV panels (azimuth = 180°).

S4 Additional figure

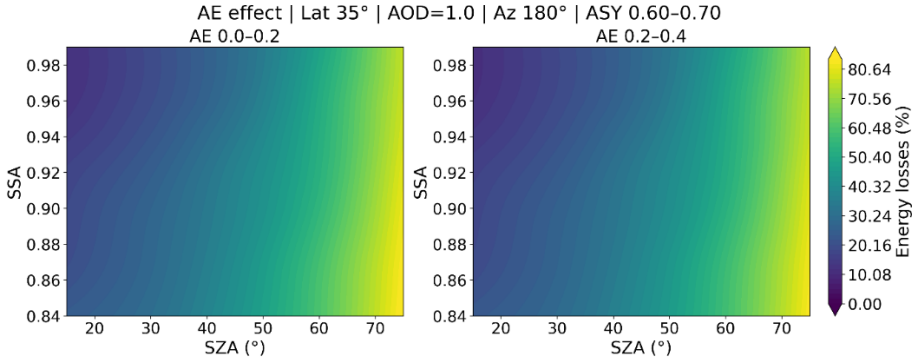

Figure S1. Sensitivity of PV energy losses (%) to the Ångström exponent (AE = 0.0–0.2 and 0.2–0.4) at latitude 35° N for AOD = 1.0 and south-oriented PV panels (azimuth 180°).

S5 Additional figure

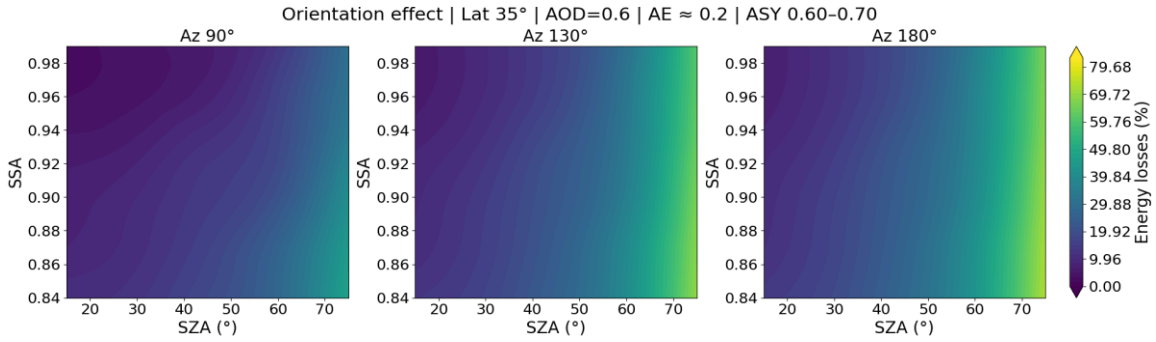

Figure S1. Sensitivity of PV energy losses (%) to PV panel orientation (azimuth 90°, 130°, and 180°) at latitude 35° N under moderate dust conditions (AOD = 0.6, AE ≈ 0.2).

S6 Additional figure

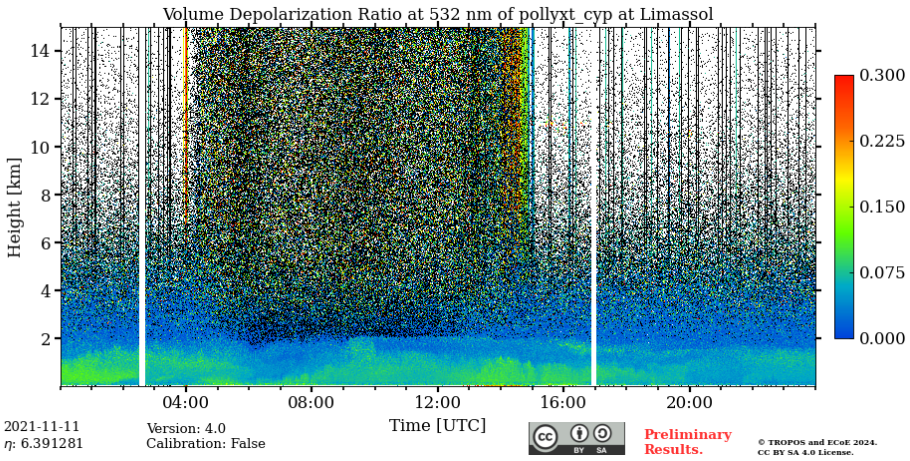

Figure S1. Depolarization ratio from ground-based lidar observations at 532 nm at Limassol during the second day of the event, on 11/11/2021.

S7 Additional figure

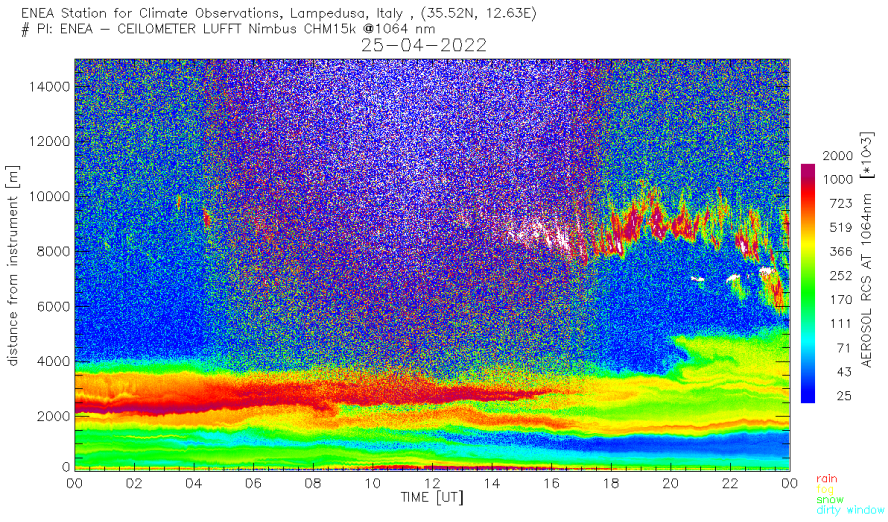

Figure S1. Ground-based ceilometer observations at 1064 nm at Lampedusa station during the fifth day of the event, on 25/04/2022.