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Atmospheric Chemistry and Physics Discussions

# *Interactive comment on* "Solar 27-day signatures in standard phase height measurements above central Europe" *by* Christian von Savigny et al.

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You observed remarkably larger amplitude of the 27-day variation in the phase reflection heights near 80 km at solar minimum than at solar maximum. You do not have explanation for this finding. Let me inform you that the remarkably larger amplitude of the 27-day variation in the lower ionosphere was also found in the radio wave absorption in the lower ionosphere by Pancheva et al. (1991). Main conclusions nfrom this paper: The 27-day fluctuations in the lower ionosphere are of direct solar origin only if the Lyman-$\alpha$ flux exhibits a very well expressed solar rotation variation. The absorption fluctuations are largest in winter near solar activity minimum, in fair coincidence with the maxima of corresponding fluctuations in zonal and particularly meridional winds. This indicates a dynamical forcing (maybe of solar origin).



Reference: D. Pancheva, R. Schminder, J. Lastovicka (1991): 27-day fluctuations in the ionospheric D-region. J. Atmos. Terr. Phys., 53 (11/12), 1145-1150, https://doi.org/10.1016/0021-9169(91)90064-E.

Best regards, Jan Lastovicka

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