Atmos. Chem. Phys. Discuss., 15, C11336–C11337, 2016
www.atmos-chem-phys-discuss.net/15/C11336/2016/

Atmospheric Chemistry and Physics Discussions

Interactive comment on "Response of OH airglow emissions to the mesospheric gravity waves and its comparisons with full wave model simulation at a low latitude Indian station" *by* R. N. Ghodpage et al.

Anonymous Referee #2

Received and published: 11 January 2016

General Comments The paper presents an analysis of the experimental data obtained by the photometer in Kolhapur, (16.8 °N, 74.2 ° E), India, in order to detect variations in the characteristics of the hydroxyl radiation (intensity, temperature, time lag between them) at propagation of internal gravity waves (IGW) through the emission layer. It is not clear by what criteria, as the parameters characterizing the disturbance of characteristics of the observed emission of hydroxyl, the authors used Krassovsky's numbers η and Æ§. In the main conclusions of the article the authors present differences or coincidence of the obtained values of Krassovsky's numbers with the data of the nu-

merical modelling executed for conditions of observation, and with the data, obtained in a number of others published works. Neither the analysis, nor discussion of the causes of revealed differences (coincidences) in this article is not presented. The article has no clear purpose and a problem on which solving the authors made efforts. The paper requires considerable revision before it can be published.

Specific comments 1. There is no description of the organization of the hydroxyl emission monitoring - was the radiation observed at one point of the sky or at several points? To register IGWs using any emission (in this case - the hydroxyl emission) is required to satisfy the condition of observation necessary to identify them - simultaneous observations of variations in the intensity and temperature in the layer not less than in three sites of the sky. 2. There is no description of the methodology for determining the absolute values of the intensity of emission of hydroxyl, its variations, and accuracy. 3. There is no description of a technique of definition of the rotational temperature of the hydroxyl emission and accuracy of its definition. 4. There is no description of the analysis of statistical data providing satellite measurements, which are used together with ground-based measurements. 5. What criteria did the authors use, attributing observed variations in characteristics hydroxyl emissions as associated with IGW impact? 6. In Figures examples of variations of observed intensity and temperature in absolute values should be presented.

Interactive comment on Atmos. Chem. Phys. Discuss., 15, 35881, 2015.

ACPD

15, C11336–C11337, 2016