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QUESTIONS ON ACCOUNTING OF SATURATION EFFECT OF NORMALIZED
DIFFERENTIAL VEGETATION INDEX FOR DIAGNOSIS OF ECOLOGICAL SYSTEMS
(pp. 59–62)

Annotation. The necessity for taking into account of saturation effect of NDVI in existing mathematical models of ecosystems, developed on the basis of NDVI is shown. On the basis of exponential relationship between indices NDVI and LAI the example for transfer of existing models on the basis of LAI is shown. The graphoanalytical method for calculation of averaged values of LAI and coefficient of attenuation in the model of Baret and Guyot is suggested

Keywords: vegetation index, ecological system, radiation, saturation effect, mathematical model

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1. Running S. W., Nemani R. R., Heinson F. A. et al. (2004). A continuous satellite-derived measure of global terrestrial primary production. *BioScience*, 54(6), pp. 547-560. doi: [10.1641/0006-3568\(2004\)054\[0547:ACSMOG\]2.0.CO;2](https://doi.org/10.1641/0006-3568(2004)054[0547:ACSMOG]2.0.CO;2)
2. Monteith J. L. (1972). Solar radiation and productivity in tropical ecosystems. *Journal of Applied Ecology*, (9), pp. 747-766.
3. Gilmanov T. G., Tieszen L. L., Wylie B. K. et al. (2005). Integration of CO₂ flux and remotely-sensed data for primary production and ecosystem respiration analyses in the northern great plains: Potential for quantitative spatial extrapolation. *Global Ecology and Biogeography*, 14, pp. 271-292. doi: [10.1111/j.1466-822X.2005.00151.x](https://doi.org/10.1111/j.1466-822X.2005.00151.x)
4. Ünsalan C., Boyer K. I. (2004). Linearized vegetation indices based on a formal spatial framework. *IEEE Transactions on Geoscience and Remote Sensing*, 42(7), pp. 1575-1585. doi: [10.1109/TGRS.2004.826787](https://doi.org/10.1109/TGRS.2004.826787)
5. Jiang Z., Huete A. R., Didan K., Miura T. (2008). Development of a two-band enhanced vegetation index without a blue band. *Remote Sensing of Environmental*, 112, 3833-3845. doi: [10.1016/j.rse.2008.06.006](https://doi.org/10.1016/j.rse.2008.06.006).
6. Chen R.-K., Yang Ch.-M. (2005). Determining the optimal timing for using LAI and NDVI of predict rice yield. *Journal of Photogrammetry and Remote Sensing*, 10, pp. 239 – 254.
7. Aparicio N., Villegas D., Casadesus J. et al. (2000). Canopy reflectance indices: a new tool for assessing durum wheat LAI and yield. (pp. 117-119). Madrid: CIHEAM – Options Mediterranean's.
8. Asadov Kh. G., Fatullaev S. A., Zeinalova A. N. (2012). Remote control of soil pollution using spectral vegetation indices. *Kontrol'. Diagnostika*, (3), pp. 65 – 68.
9. Gong P., Pu R., Miller J. R. (1995). Coniferous forest leaf area index estimation along Oregon transect using compact air-borne spectrographic imager data. Available at: telegeo.wgsr.uw.edu.pl/Teledetekcja_Srodowiska/tom_44/...

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