



**The Second International Conference of
Aerosol Science and Global Change**

第二届“气溶胶科学与全球变化”国际学术会议

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August, 16-21, 2009, Hangzhou, China

2009年8月16-21日, 中国, 浙江杭州

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Aerosol optical properties variability in Kishinev, Moldova

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Abstract: Measurements of aerosol optical depth (AOD) and Angstrom exponent (AE) have been carrying out at the ground station at Kishinev (Moldova) site since 1999 within the frameworks of the AERONET project. It was shown that monthly mean values of AOD500 nm reveal seasonal variation: with low values of AOD ~ 0.1 observed in winter and with large values of AOD $\sim 0.3-0.5$ in summer. Multiyear (1999-2008) monthly means of AOD500 nm and AE are equal to ~ 0.21 and ~ 1.44 , respectively. AOD and AE values can be used as indicators of the extent of loading the airmasses with aerosols of different nature and origins, i.e. generated from biomass burning both at local seats and long-range transported, or from dust outbreaks from Saharan regions. For example, on September 11, 2002 daily means of AOD500nm reached extremely large value ~ 2.15 and AE was equal to ~ 1.18 . This was due to long-range transportation of airmasses with smoke particulates generated from numerous loci of fires localized in the West Russia. At the same time, on May 3, 2003 daily means of AE was extremely low with value ~ 0.29 and AOD500nm was equal to ~ 0.57 , because of intensive dust outbreak from Saharan region and its transportation in Europe.

Keywords: aerosol optical depth, Angström exponent

Brief instruction of the author: Alexandr Aculinin, Atmospheric Research Group (ARG), Institute of Applied Physics, Academy of Sciences of Moldova; 5 Academiei Str., Kishinev, MD-2028 Moldova: solar radiation monitoring from UV through IR, AOD measurements within the framework of the AERONET project. total ozone content observations. More details about research activity and ground-based station you can see at the ARG website: <http://arg.phys.asm.md>.

摩尔多瓦的基希讷乌气溶胶光学特性的变化

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摘要: 从 1999 年在 AERONET 项目的框架内, 在摩尔多瓦的基希讷乌地面站点已经开始气溶胶的光学厚度和波长指数的观测。结果显示: 在 500 nm 处的月平均 AOD 呈现出季节变化, 最低值的冬季大约为 0.1, 最大值的夏季大约在 0.3-0.5。500nm 处多年的 (1999-2008) 月平均 AOD 和月平均 AE 分别大约为 0.21 和 1.44。AOD 和 AE 值可以作为不同状态和来源的气溶胶负载程度的一个指示器。例如, 由生物燃烧在本地生成的和通过远距离运输的, 或来自非洲沙哈拉区域爆发的沙尘。例如, 2002 年 9 月 11 日, 500nm 处的日平均 AOD 最大达到大约为 2.15, AE 大约为 1.18。这是由于气团把位于俄罗斯西部的大量大火燃烧的烟雾颗粒经长距离运输进来的结果。同时, 2003 年 5 月 3 日, 日平均 AE 达到最低, 大约为 0.29, 500nm 处的 AOD 大约为 0.57, 这是自沙哈拉区域爆发的沙尘长距离运输到欧洲的原因。

关键词: 气溶胶的光学厚度 波长指数