

# Usage of Lidar Systems for Detection of Hazardous Substances in Various Weather Conditions

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## **Abstract:**

For the tasks of hydrogen explosions prevention and environmental protection the paper investigates the possibility of using differential absorption lidars for remote estimation of hydrogen concentration. The dependence of the atmosphere transmittance upon the path length in various weather conditions, as well as the dependences of the power of the received laser signals and hydrogen concentration upon the path length are investigated. The received results prove the possibility of defining concentration of hazardous substances by laser systems at the distances of 1...10 km with account of attenuation of laser irradiation in the atmosphere for various wavelengths.

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