New developments and future perspectives of gas avalanche photomultipliers

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Abstract: Gas avalanche detectors combining solid photocathodes with fast electron multipliers provide an attractive solution for photon localization over very large areas and under high illumination flux. It offer single photon sensitivity, possibility of operation under high magnetic field, excellent spatial and time resolution. The principal factors governing the operation of these detectors will be discussed. Originally developed for the particle physics, gas avalanche photomultipliers application expanded in other areas will also be briefly discussed.