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## Development and Study of the Multi Pixel Photon Counter

*Monday 19 February 2007 17:00 (20 minutes)*

The Multi Pixel Photon Counter is a novel semiconducting photon counting device made by Hamamatsu Photonics K.K. based on concept of Silicon Photomultiplier. The MPPC consists of 100-1600 APD (avalanche photo-diode) pixels, and each pixel works in limited Geiger mode with inverse bias voltage around 80 volts, which is a few volts above breakdown voltage. The MPPC has excellent features such as high gain ( $10^5$  -  $10^6$ ), Excellent photon detection efficiency (25-60%), low cost and tolerance for magnetic field. On the other hand, the MPPC has some points which are still necessary to be improved to use at actual high energy physics experiments. In this talk I will show recent development of the MPPC and its performance. Some basic properties, such as gain, dark noise rate, inter-pixel cross-talk, photon detection efficiency will be presented. as well as results of microscopic laser scan. We will also discuss about practical application of the MPPC in various fields.

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