FAKULTÄT für PHYSIK
LUDWIG-MAXIMILIANS-UNIVERSITÄT
MÜNCHEN/GARCHING

PHYSIK-DEPARTMENT
TECHNISCHE UNIVERSITÄT MÜNCHEN
MÜNCHEN/GARCHING

MLL-KOLLOQUIUM

Donnerstag, 30.06.2016, 16^{15} Uhr

Hörsaal der LMU in Garching, Am Coulombwall 1
Treffen zum gemeinsamen Kaffee 16 Uhr

Dr. Stefan Rummel

(LMU München)

The DEPFET Pixel Detector for the Belle 2 Experiment

The KEKB accelerator facility at the Japanese High Energy Laboratory (KEK) currently receives a luminosity upgrade towards a peak luminosity of $8{\cdot}10^{35}/\mathrm{cm}^2\mathrm{s}$, the forty fold of the luminosity previously achieved. To cope with the increased rates, a complete upgrade of the Belle experiment towards Belle II is under way.
The innermost detector, so far instrumented with silicon strip detectors, will be extended by two pixel layers, using the Depleted Field Effect Transistor (DEPFET) technology developed at the Semiconductor Laboratory (HLL) in Munich.
The technology integrates the first amplification stage into the fully depleted bulk. This allows high S/N ratios, since the input capacitance of the first stage can be very small. To build low mass detectors a thinning technology compatible with the double sided process has been developed.
I will present the requirements for this detector, as well as the DEPFET technology and the current status of the project.

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