

System aspects of the ILC-electronics and power pulsing

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The detector development for the ILC experiments is driven by the bunch structure of the accelerator, short trains with long empty intervals, and high granularity of the detector. This requires the electronics to be integrated into the active detector volume.

This talk exemplifies the concept for the electronics aiming for mechanical compactness through the CALICE-calorimeter. ASIC's nearby the active cells store the signals while the train and multiplexed data are transferred to the DAQ during the intervals between trains on a few signal lines. The compactness also requires components to be integrated into thin PCB's.

The compactness and complexity of a system is also defined by the infrastructure. Therefore the concept aims for low power consumption to avoid active cooling. This can be reached by power pulsing synchronous to the train structure.

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