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# Readout ASIC and electronics for the 144ch HAPD for Aerogel RICH at Belle2

In the Belle2 experiment at SuperKEKB, we are developing
a proximity focusing ring imaging Cherenkov detector using aerogel as
a radiator (Aerogel RICH) as a PID device in the endcap.
A 144ch multi-anode HAPD (Hybrid avalanche photo-detector) developed
with Hamamatsu Photonics K.K. (HPK) is used as a photodetector.
In order to read out a total of around $10^5$ channels from
Aerogel RICH, we have been developing an ASIC that amplifies and
digitizes the signal from HAPDs.
Because we need to detect single photons and the gain of HAPDs is lower
than conventional photo-multipliers,
the ASIC must be of high gain and low noise.
After several productions of the prototype ASICs, the final version
of the ASIC is now being developed. The signal from the ASICs
is read out by FPGAs, and sent to the central DAQ systems of Belle2.
The electronics have to be compact to be fitted in a limited space
behind the detector. The design and development status of the electronics
are reported in the presentation.

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