CALIBRATION SYSTEM OF EAS CHERENKOV ARRAYS USING COMMERCIAL DRONE HELICOPTER

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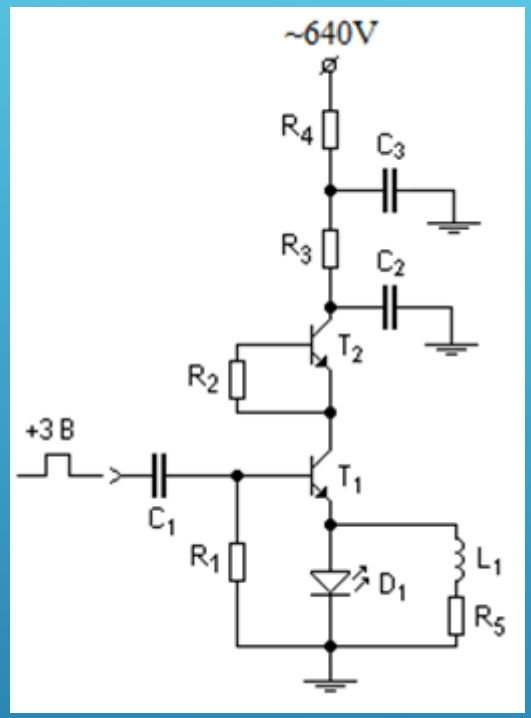
EAS CHERENKOV ARRAYS

Registration of Cherenkov light from extensive air showers (EAS) is a powerful tool for studies of high energy cosmic rays. Timing calibration in astroparticle physics experiments with sparsely distributed photon detectors like in EAS Cherenkov wide-angle arrays is not simple experimental task.

HIGH POWER BLUE LEDS AND THEIR DRIVERS

The light source power supply.
AH08P-5, DC to High Voltage DC Converter.



To get high light yield of the light source staying still in a few nanoseconds time domain the LED is driven by specially designed driver (Fig. 1) using a pair of avalanche transistors ZTX415 switched consecutively

DRONE

The drone can reach easily 500 m hight above EAS Cherenkov array and eleviate up to 300 g loading weight. The light source with its power supply and triggering pulse generator weighs well below 100 g. The pulse generator is based on Arduino Nano v3 plate with 8-bit microcontroller AVR ATmega328P (Atmel).

THANK YOU FOR YOUR ATTENTION