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The lonely perpetrator in the DCDC FEAST2 case: how an individual transistor threatened the operation of the CMS pixel detector

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The failure of a first DCDC converter in the power distribution network of the CMS pixel detector system on October 5th, 2017, might have been due to a single failure and did not raise particular concern. However, it was soon followed by a steady rate of failures of DCDCs in random positions in the detector. Projections of this rate to the future led to an ominous scenario where, without resolving interventions, the 2018 data taking would be jeopardised. This talk will report the evolution of the long investigation aimed at uncovering the origin of the problem, to propose temporary patches for the 2018 run and, eventually, a cure to achieve long-term functionality of the power distribution system.

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