

FCAL-LED vs Raw Data

GlueX calorimeter working group

Susan Schadmand, Wednesday, May 12, 2021

FCAL-LED vs DATA

RunPeriod-2019-11 Batch 1

raw data Run071364_026-115

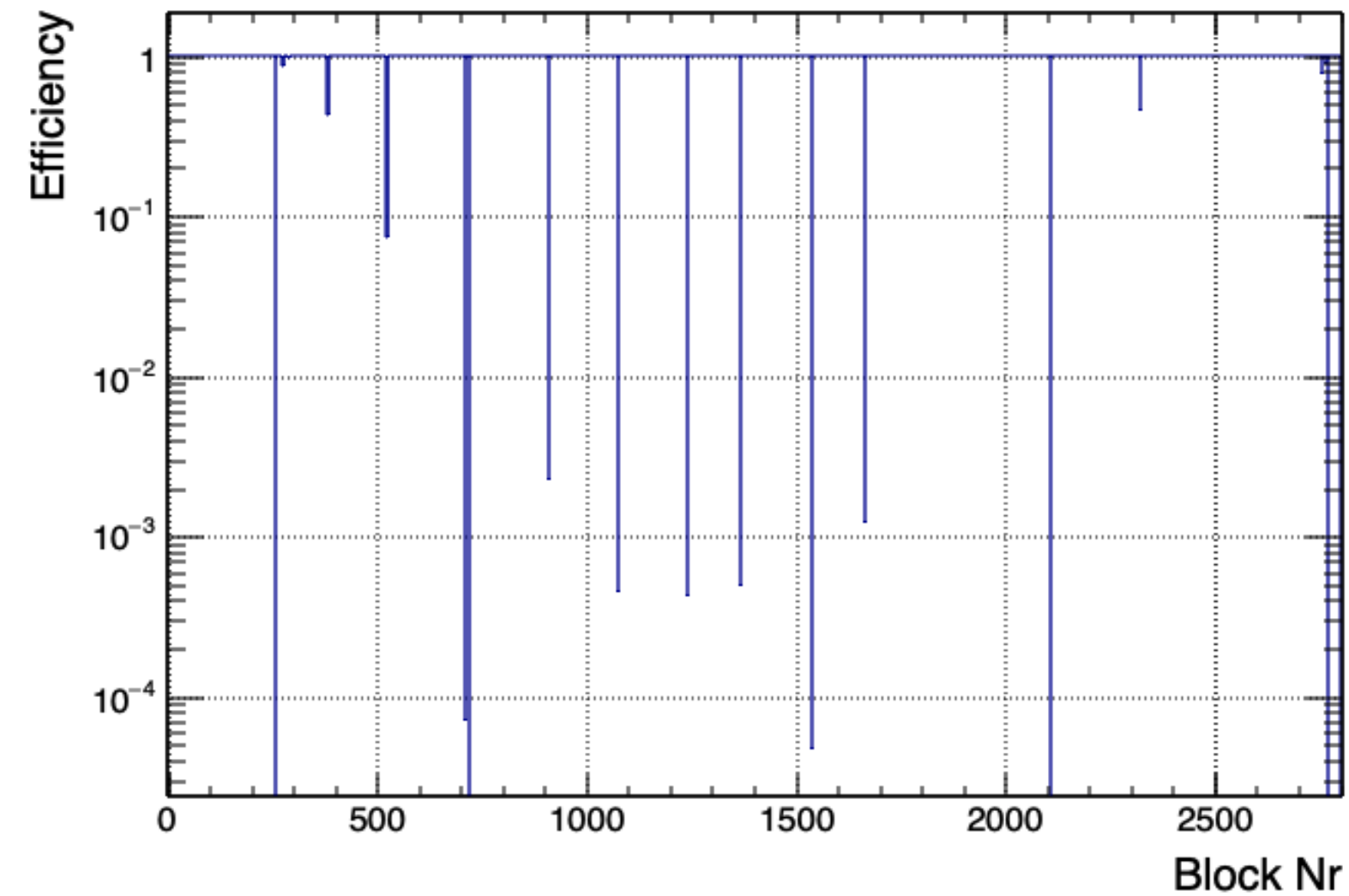
DFCALDigiHit (**lhs**) and DFCALHit banks (**hrs**)
with
LED (**top**) and DATA (**middle**) triggers

- LED:
sum of ADC integrals, range corresponding
to the 5 LED settings
- DATA: sum of ADC integrals > 0

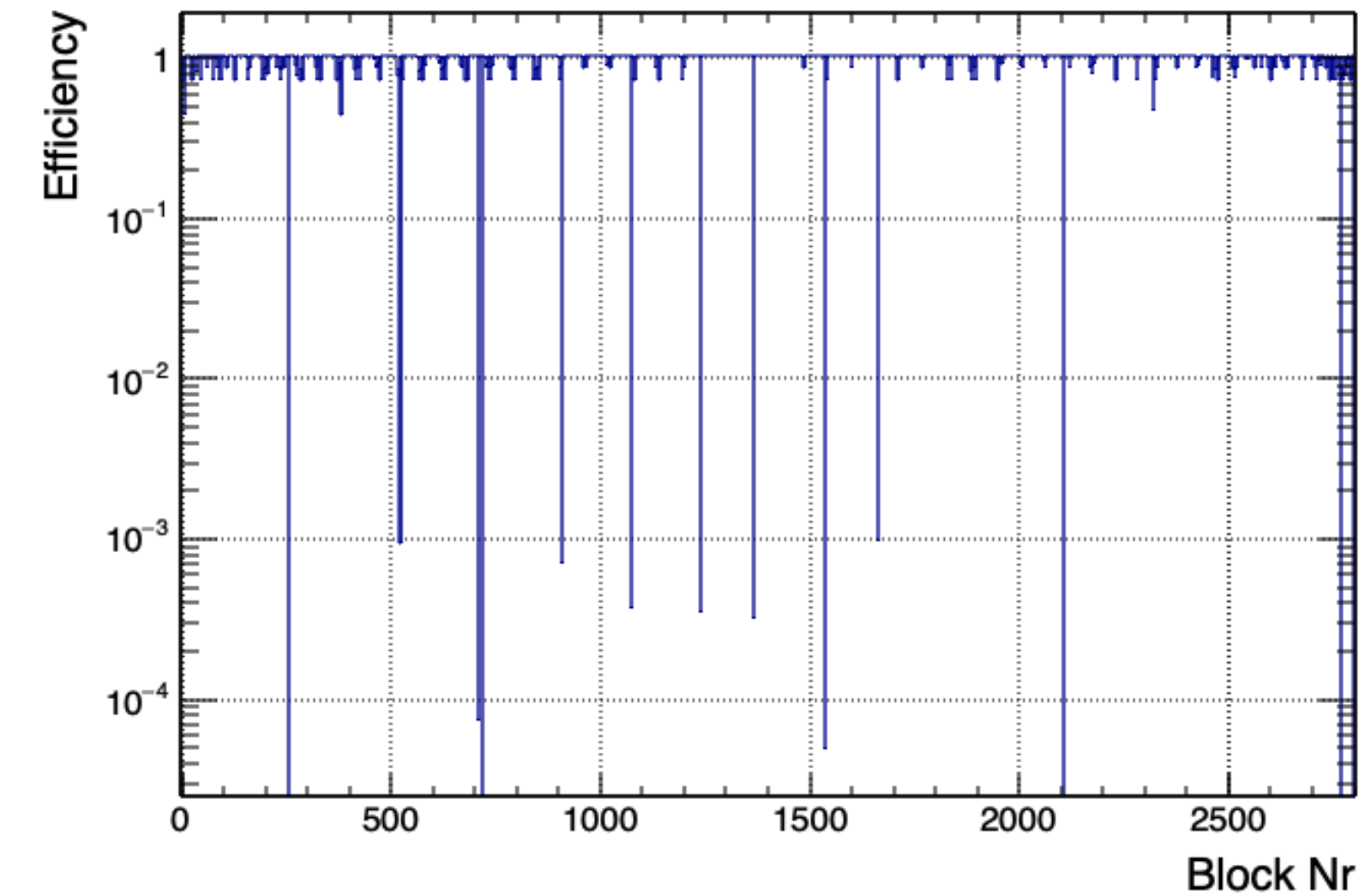
hit patterns:
histogram at most one entry per block per
event

- small differences between hit banks
- overall agreement LED and data

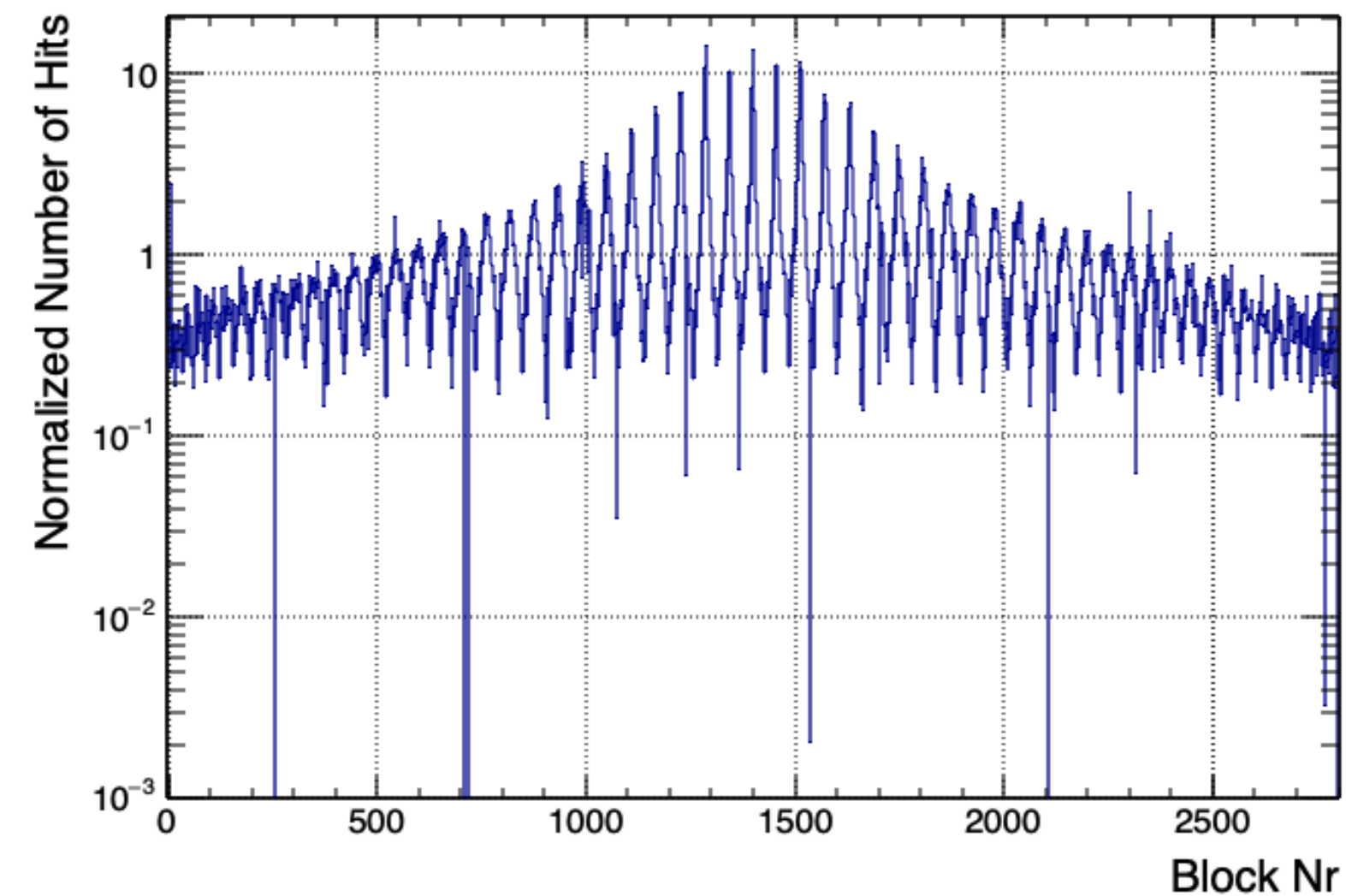
FCAL-LED, DFCALDigiHit, Run_71364



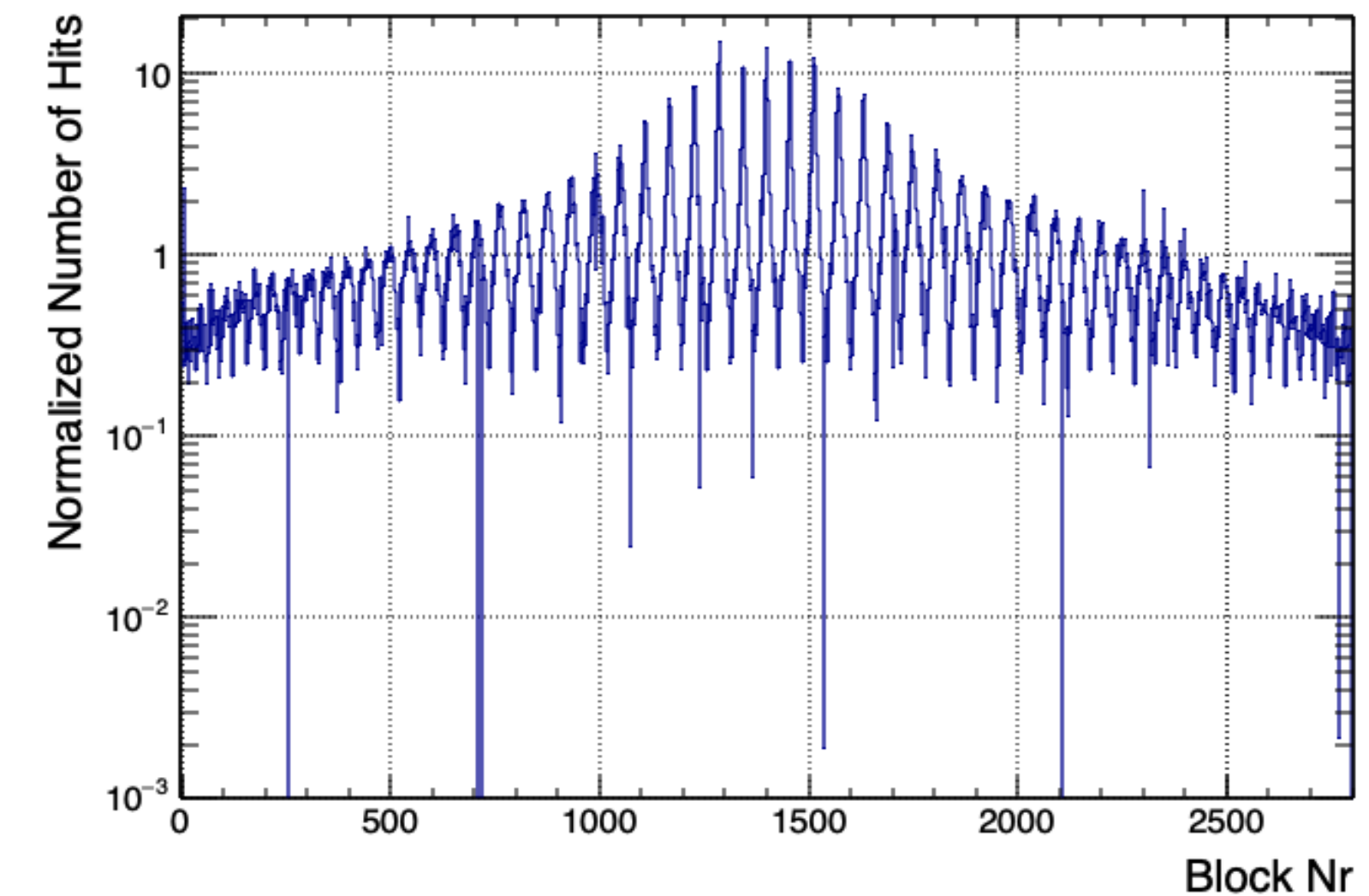
FCAL-LED, DFCALHit, Run_71364



DATA, DFCALDigiHit, Run_71364



DATA, DFCALHit, Run_71364



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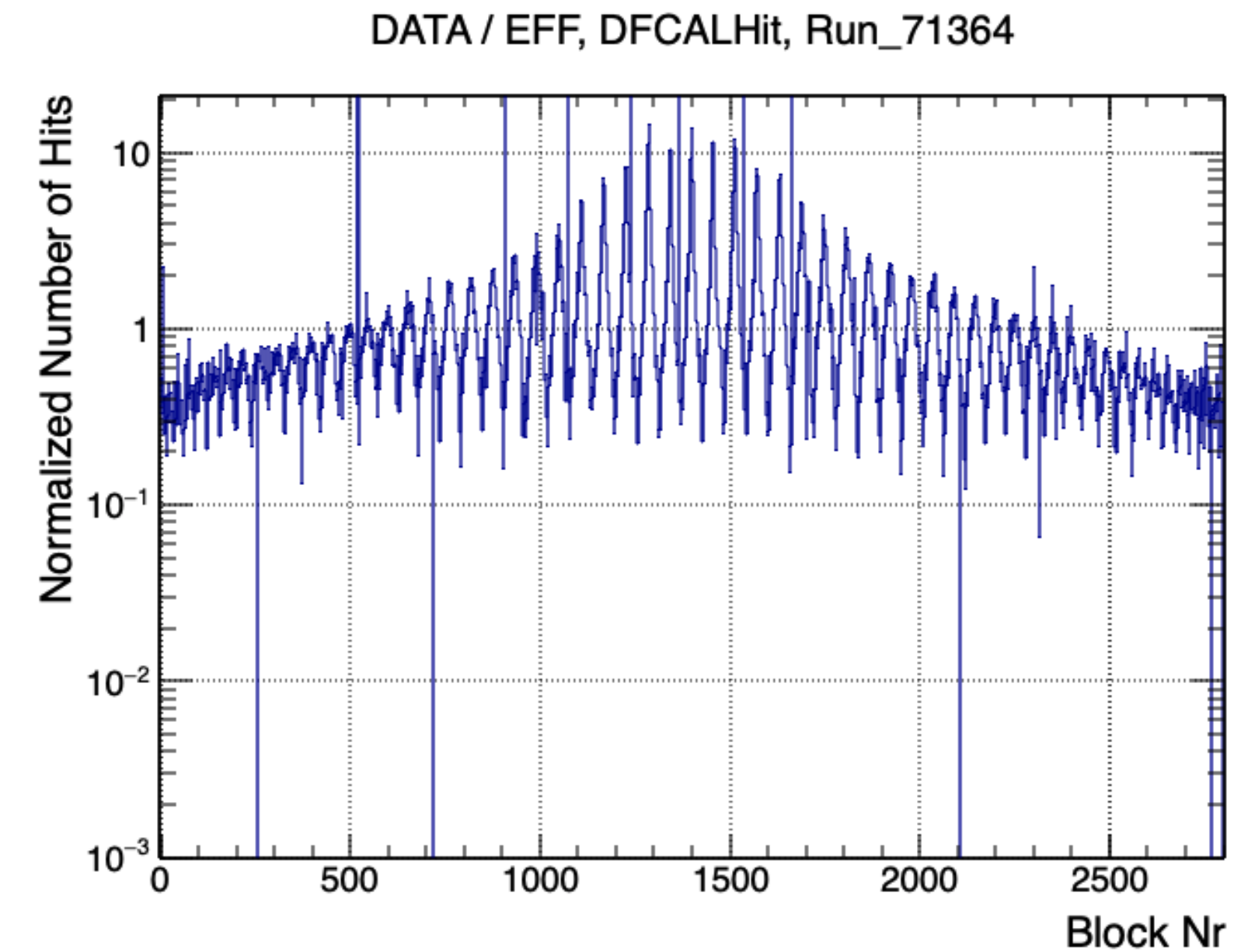
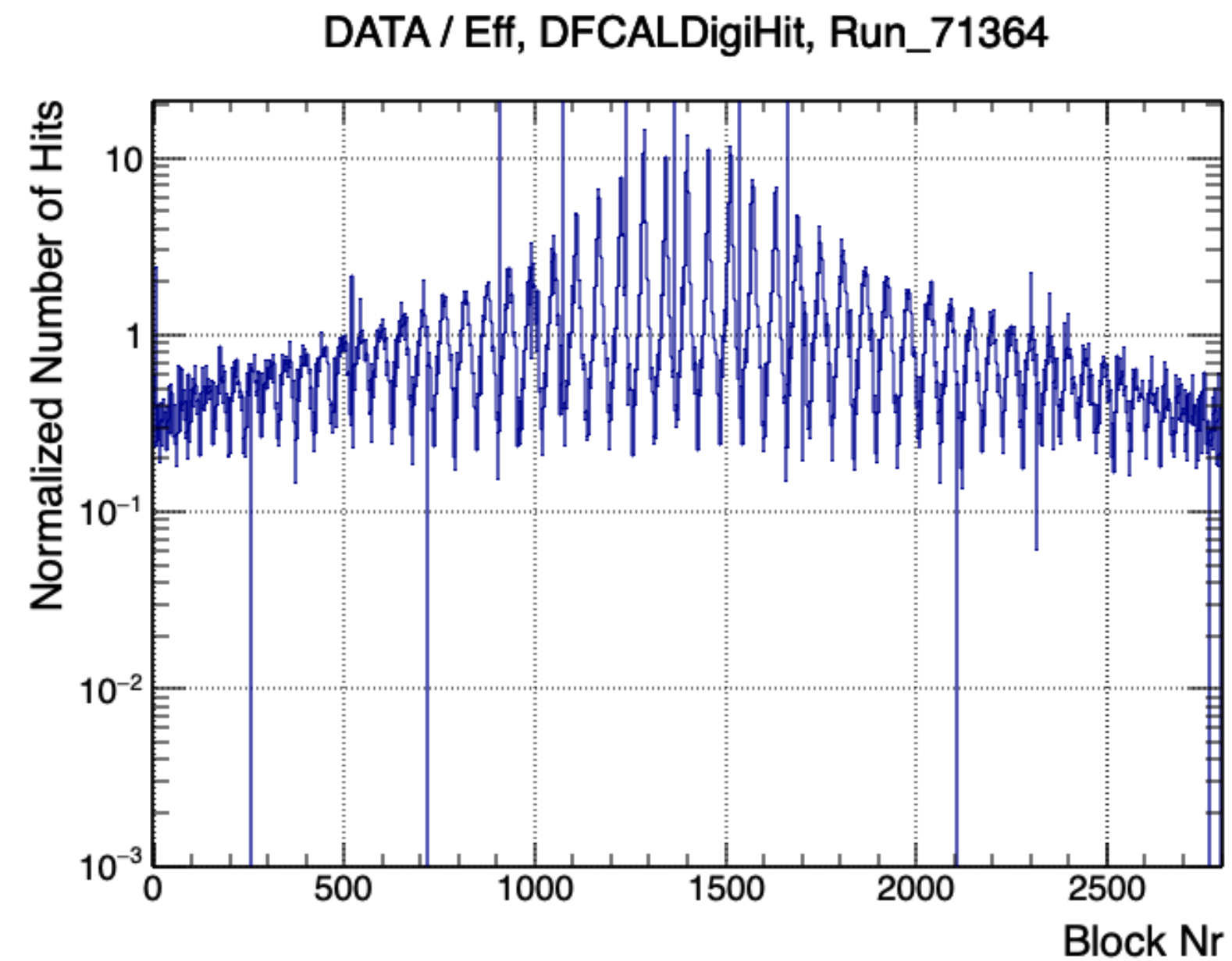
reminder: problematic FCAL blocks have fluctuating or no high voltage

zero efficiencies: consistent (dead channels)

finite efficiencies:

- consistent as in problematic blocks
- inconsistent when used as efficiency

reason:
unstable HV situation combined with the rate difference of LED vs data events



LED block efficiencies, average per run used in simulations

- presently for knocking out blocks
- use as average efficiency seems difficult