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Study of double-bump air showers contaminated by clouds and Cherenkov light AMIR SHADKAM, Louisiana state University — Complex air shower development ("double-bumps") can be used to study hadronic physics at high energy but can also arise from other effects. Fits using two Gaussian functions of the age-parameter have been applied to the Pierre Auger Observatory data and have identified a large set of events with irregular shower profile shapes. Clouds can scatter the air shower fluorescence and Cherenkov light and affect the amount of detected light. Cloud maps extracted from GOES satellites data are used to identify the events contaminated with clouds. Also some examples of contamination with direct Cherenkov light are presented here.

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