MAR17-2016-030086

Abstract for an Invited Paper for the MAR17 Meeting of the American Physical Society

## Applications of Muon Radiography ELENA GUARDINCERRI, Los Alamos National Laboratory

Cosmic-ray muons are free, ubiquitous, very penetrating particles. Muon radiography takes advantage of them to probe objects that, because of their thickness or the shielding around them, would be out of the reach of more traditional radiographic techniques. I will briefly review the different techniques that are currently used to perform cosmic-ray muon radiography and discuss some applications to actual problems. I will discuss, in particular, the use of cosmic ray muons to assess the content of dry casks containing spent nuclear fuel, an important task to maintain continuity of knowledge over the fuel itself and avoid its diversion. I will then discuss the use of cosmic ray muons to image the interior of thick walls for historic preservation purposes and briefly review other applications.