

Muon mission in Tuscany

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The famed Cathedral of Santa Maria del Fiore was completed in 1436, and the secrets of what hidden supports or unidentified vulnerabilities might lie behind its walls have been lost to the ages. Fortunately, Los Alamos has an innovative imaging solution sourced from the cosmos with which to peer inside. Instead of metal detectors, x-rays, or ultrasonic inspection, scientists will use cosmic-ray muon trackers to create vivid images of hidden reinforcement elements supporting the 37,000-ton dome.

The award-winning technology pairs advanced detectors with high-tech software to construct images from high-energy particles called muons created in collisions between cosmic rays from space and molecules in the earth's upper atmosphere. Already proven in archaeology and national-security applications, the technology will now demonstrate its worth at infrastructure monitoring.

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