Every year thousands of objects classified as meteoroids impact and disintegrate into the Earth’s atmosphere as meteors. Most of these objects are material from other larger bodies, such as asteroids and comets, that have been broken or basted off. Some are rocky while others are metallic, or they can be a combination of both. Current estimates for this global meteor flux vary from 2,000-200,000 tons per year, and estimates for the average velocity range between 10 km/s and 70 km/s. Nevertheless, the basic properties of this global meteor flux, such as average mass, velocity, and chemical composition, remain poorly understood.

Currently, about 20 specialized meteor radars operate in the world using specular reflections and frequencies of 15-40 MHz. These reflections are known as meteor head-echoes and non-specular trails. A meteor head echo is typically followed by trail reflections, called non–specular trails. While the head echo is believed to be a cloud of electrons moving at the speed of the meteoroid, the non-specular trail echoes are attributed to coherent radio scatter from plasma turbulence–generated field aligned irregularities. Because these observations produce such detailed signatures, they show great promise as tools for deriving more complex parameters about meteoroids.

Until recently, meteor research in the Caribbean was done with photographic and TV cameras, and the climatology of these particles that enter the island’s atmosphere was unknown. Recently, a meteor radar funded by the project PRISMA: Puerto Rican Meteor Radar Studies using Meteor Radar was developed at the island of Culebra, in Puerto Rico. PRISMA meteor radar is capable of observing specular meteor trails in monostatic operation continuously (24/7), and can contribute to filling up this gap by tracing and characterizing the meteor influx over the island. It detects echoes from the ionization trails formed by a meteoroid entry in the atmosphere. Day and night, meteoroids smaller than a grain of sand penetrate the Earth’s upper atmosphere and generate meteor plasma trails at altitudes between 70 and 140 km. We will present the continuous dataset collected with PRISMA’s meteor radar to improve and increase the meteor characterization.