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Contemporary Arts Practice and Outer Space: A Multi-Disciplinary Approach (3)

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A PRELIMINARY DESIGN OF CLOUD CHAMBER FOR ENHANCING INTERCONNECTIONS
BETWEEN COSMIC RAYS AND HUMANS

Abstract

Over the centuries, humans have interacted with cosmic rays in different ways. Cosmic rays are constantly showering the earth, even though humans are insensible to them. Despite the interactive nature of cosmic rays and humans and their surroundings, their dynamics remain unnoticeable in their daily lives. Since the late 19th century when the first cloud chamber was invented, its design and observation methods have variably developed, one of which allows humans to visually observe radiation including cosmic muons, cosmic rays, with the naked eye in real time. Aiming to enhance the interconnection between cosmic rays and humans, we design a cloud chamber that transforms the signals from detected particles into artistic expressions. In particular, this cloud chamber is uniquely designed to realize a three-dimensional view from the trajectories of radiation that pass through the chamber. In this paper, we discuss the background, concepts, preliminary design of the cloud chamber, and methodologies and processes. Through interdisciplinary collaboration among experimental physicists, artists, and designers, this practice-based research explores the observation methods of particles through humanity that would enrich the meaning of their interconnectedness. Ultimately, we attempt to unveil the hidden beauty and aesthetics within the universe. This attempt builds a basic method of transforming cosmic rays into an art installation in a poetic manner, which would enhance diverse expressions and experiences of the interactive nature of cosmic rays with humans. How can we find an artistic meaning about the universe through humanity? How can we share the pleasure of touching the beauty within the universe? These questions are addressed through the collaborative processes of designing a cloud chamber and what we can observe from it.