

Pendaphonics

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www.pendaphonics.com

Pendaphonics is a tangible physical-digital-sonic environment that engages users in individual, collaborative, group, and distributed social music experiences through the manipulation of a set of large-scale sensor-equipped pendulums that control rich, reactive soundscapes.

Pendaphonics consists of 8 interactive sonic pendulums with sensors measuring the x-y-z coordinates of their motion. Participants manipulate a spatialized soundscape that is directly controlled by the positions and motions of the pendaphones. Each of the pendaphones can be raised and lowered between 0-3 meters in height, and the trajectory of a swing directly controls the sounds emanating from a loudspeaker mounted above. The pendaphones are attached to spring-retracting cords that pull them toward the ceiling, and are counter-weighted by their interaction nodes at the bottom in order to attain neutral buoyancy. Multiple channels of loudspeakers are used to spatialize the sounds being generated, enhancing the sense of physical immersion in the piece.

Pendaphonics focuses on explorative, collaborative performance, combining artistic qualities with social activities and play. Visitors playing the pendaphones evoke a soundscape through ensemble interaction, producing a wide range of musical sounds via the many different combinations of inputs. For example, one mode allows each pendaphone to control a large virtual turntable that allows scratching and other DJ type effects, while another enables control of musical Tibetan bowl in which audio is generated through physical modeling synthesis. Other playful sounds encourage sonic games involving bouncing, pulling, pushing, swinging in circles and collaborating with other users to generate sounds of trembles, shudders, shakes, and collisions that can be enjoyed by participants and observers alike.