

Valery Vermeulen

Mikromedas AdS/CFT 001

Ash International CD/DL

Belgian electronic music producer, composer, multimedia artist and mathematician Valery Vermeulen is a rare character indeed: the computational wizard willing to pull back the curtain. While he dives deep into complex datasets to gut them for compositional ends, he refuses to obfuscate his sources or methods of transformation; he does not feign objectivity. His research interests include affective computing and the links between music and emotions; his Emo-Synth performances combine machine learning and input from biofeedback sensors to make music with an audience in real time, revealing data flows and sources as part of the act. Another of his projects, *Krystal Ball*, is based on compositional tools he derived from statistical instruments used in the financial industry, in response to the 2008 crash. While he doesn't make any explicit statements about his position, "*Center-MCS – KrystalBall Track04*" opens with plinking noises like tossed dice and expands into controlled synth howling, suggesting that he's probably not a fan of the Chicago School.

Mikromedas AdS/CFT 001 is a set of six compositions derived from data surrounding observations of black holes, neutron stars and theoretical investigations into quantum gravity. Vermeulen is working with datasets gathered by an international consortium of university researchers, all profusely thanked and credited, and his live show for the project includes visuals by digital artist Jaromir Mulders, whose interpretations of complex gravitational fields look like an Ansel Adams landscape chewed up by an AI image generator.

Sonification is always a kind of fiction, as much about the story an artist chooses to tell as it is about numbers, and to his credit, Vermeulen is clear about

this on his own website, writing "On a conceptual level the AdS/CFT Performance Series deliberately balances on the edge where scientific knowledge ends and a speculative vision of reality starts to emerge..."

Researchers working on quantum gravity provide a growing amount of mind bending models of reality that might never be tested by human endeavour. In this way a fictional reality is being created where scientific and artistic creativity become interchangeable."

Vermeulen could work with any sonic palette he wanted here. There's nothing stopping anyone from translating any dataset into dayglo gabber bangers played on kazoo. With cherry-picked data samples and the right mathematical transforms, anything is possible (on his website, Vermeulen generously links to all of his sources for astronomical data and the software he uses – much of it open source, like Alex McLean's *TidalCycles* – both showing his work and offering a jumping off point for anyone to respond with a different aesthetic approach). The physics of black holes are so bizarre that a *Looney Tunes* treatment might even be appropriate. But *Mikromedas* treats its sources with more, uh, gravity, using a sober palette of synthesized dust storms, buzzers and beacons, hissing gases, random noises of machinery going bump in the lab.

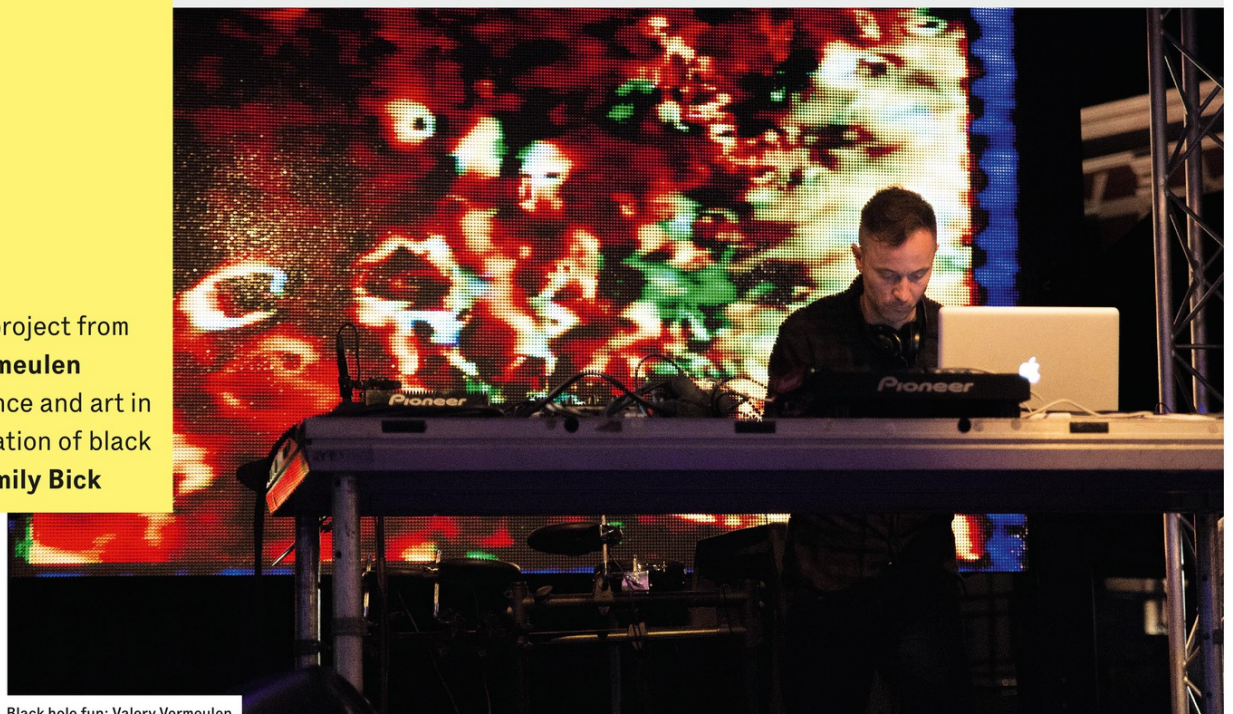
The album opens with tones that sound like mandala sand scattered over competing rotating surfaces. The rotations become faster and more violent; by the final minute, a crunchy patch of locked-groove static gives way to ominous growling. The anxious beat ticking through "*Mikromedas AdS/CFT 001 03*" cycles through pulses reminiscent of an adrenaline-spiked heartbeat, a nervous fingertip tapping a microphone, footsteps running down a tiled corridor, followed by a rubbery refrain that repeats to the piece's end. An amped-up Shepard tone blast-off is overwhelmed by clouds of hiss and rumbles of acceleration near the end of

"*Mikromedas AdS/CFT 001 04*", before the track ends with a few spare pulses that sound like a spiky synth bass, deflatory footnotes that make the spacefaring climax of the piece seem like empty heroics.

Linked to a black hole narrative, Vermeulen's compositions can be read as escape strategies, premonitions of assured doom, or tragicomic Beckettian stabs against inevitable failure, with black holes standing in for climate change, collapsing democracy, or the cascading systems failure of your choice. Black holes were only discovered in 1971, the all-devouring shadow side of the triumphant moon landing two years earlier, and a perfect metaphorical foil for technologist triumph. Another Vermeulen project, the *OGLE-2005BLG-390Lb* performance series, uses data from the Voyager probes as they travel beyond the solar system, to imagine a voyage to an exoplanet at the centre of the Milky Way: far from swashbuckling space opera, imagine field recordings taken in a transit van with shot suspension, on the galaxy's longest road trip.

Without the backstory, though, the textural complexities of Vermeulen's work register at a human scale. He translates strange patterns of motion and physics into almost tangible shapes. Throughout, there is a palpable feeling of suction, a centre stirring clouds of oscillation, hiss and loops. Other than a two-note decaying riff at the heart of "*Mikromedas AdS/CFT 001 05*", there is nothing close to melody here, just spacious, chilly sounds and strange geometries that suggest total isolation. And it's not even the isolation of the void. Quite the reverse: Vermeulen is interpreting dispatches from the waiting room of absolute density, complete annihilation. For all that, it can be calming and beautiful: something at about the seven minute mark of "*Mikromedas AdS/CFT 001 02*" even recalls the gride drone of a Tibetan singing bowl. Go on, dive in. □

The latest project from **Valery Vermeulen** unites science and art in an investigation of black holes. By **Emily Bick**



Black hole fun: Valery Vermeulen