aba artist in residency

Pro Helvetia + ABA Artist in Residency Berlin Alexander Platz

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Berlin / Zürich

9.2020 – 4.2021

signal topographies

electromagnetism: politics of space

devices: forms of perceiving

field recordings from berlin

topographies: forms of deceiving

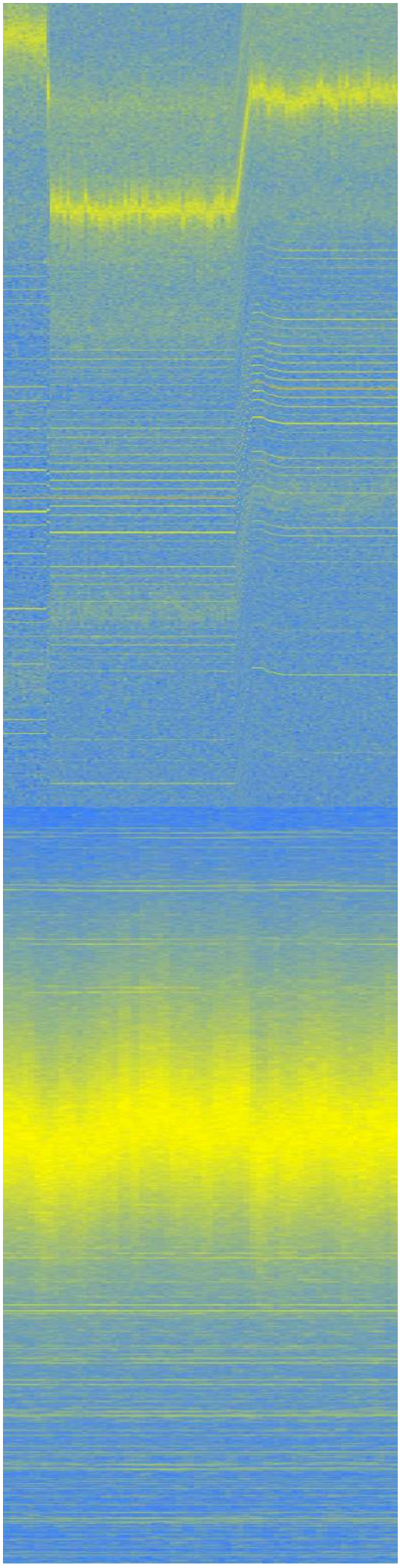
arrhythmia: essay for a radio show

traces: imaginary work

references

electromagnetism

politics of
the hertzian
space



The air space around us is filled with invisible human and non-human-made signals. These signals are sometimes the voices of stars, of celestial bodies, of intergalactic phenomena, of atoms disintegrating. Other times these signals are the product of artifacts, machines that produce, collect, and transmit information. Information is in every kind of society not merely an immaterial asset, but it is in essence activity, interactivity, transaction, and power. Through information, or better said, turning into information, "The Material Body" breaks free from the constraints of space-time and finds its way into the realm of Light. The Body dissolves its atoms through the dislocation of its actions and multiplicity of reactions, representations, and meanings. The dissolved atoms, the disintegration of atoms into electron waves, become then complexly entangled with the further emanation of ubiquitous bytes. Thus the value of the Source Body becomes either highly endangered or even more precious. The value of the further emanations is quantified in terms of the speed at which these dislocations occur, at which each emanation becomes a new Source Body for Newish Information, and the wage of Power stays on the side of the fastest.

The Hertzian Space is thus, not only a place of contingently occurring wave noise, but a place populated by organized signal patterns that carry, accumulate and release value at one place or another. The politics for regulating such Spaces can only occur at High Frequencies. You don't need to understand this, but I will try to explain this cheaply in terms of a water metaphor. Imagine the Material Body being the top of a Mountain Glacier. The glacier starts to melt, and the water flows in every direction it can. Sometimes the water would freeze again at another spot provoking the slow formation of a new glacier. Is this glacier still the Source Body or is it a new Glacier, unique? This is a matter of perspective and the value given to it. Some other times the water will flow further, forming lakes, big rivers, merging with other streams, drying out, leaving traces behind. At some point, it becomes hardly possible to track back the flow of the water. The same occurs with information, with material bodies disintegrating into bytes, giving birth to new children, dissolving their traces, becoming goddesses and gods or their antitheses.

I wish my mental health would have been less undermined, the bed at the ABA Residency would have been decent enough to have some sleep, and the pandemic situation wouldn't have restricted the freedom of movement so much. Certainly, for better or worse, it is thanks to this that the results come out this way and not otherwise. Now I know more about my own borders.

dev.ices

forms of
perceiving







Pictures from used devices

1. Self made

2. NESDR Mini 2

3. HackRF One

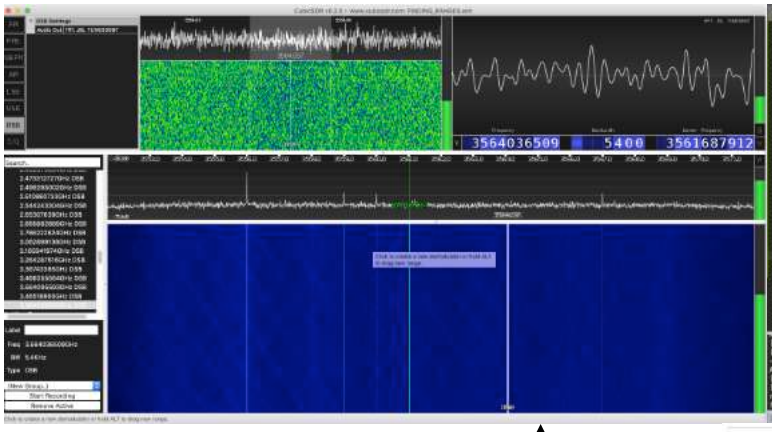
During the last months, I have explored the Hertzian Space, observing the presence of electromagnetism, within the spectrum of 20MHz till 6.5 GHz at diverse locations in Berlin. I worked with ready-made devices such as the **HackRF One** and the **NESDR Mini 2** as well as with self-made artifacts which are still in process and allowed me to monitor and record punctually geolocated data related to electromagnetic radiation (EMR). In this documentation, I present the devices in process, some other imaginary artifacts, technical aspects, field recordings conducted in Berlin as well as experiments in analyzing the data spatially and with Machine Learning techniques.

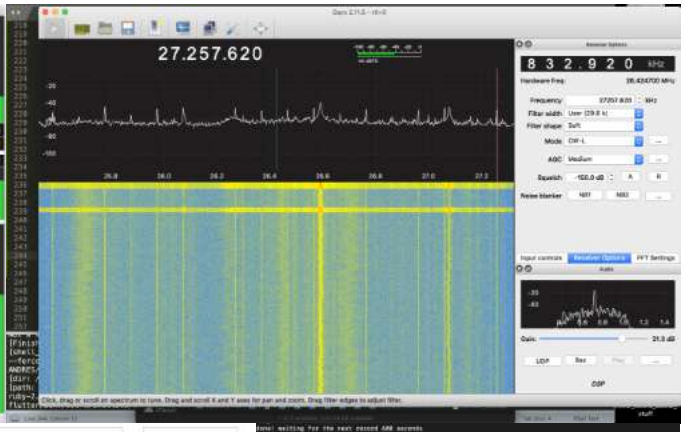
On the left side you see three images. The upper one is a protoype built with a Raspberry Pi Zero. I attached a series of components such as a camera, a GPS sensor, a battery. The whole electronic bundle is packed inside a glass Topper Ware that allows me to move freely around with the device, or attach it to a vehicle such as a car or a bike, in order to make field recordings around the city of Berlin, or any other place. I programmed the Raspberry Pi with Python in order to automate the recording process. The small program tells the device to collect data at a certain interval of time. Thus I am not sure what images and recordings the device will collect. The algorithm also uses the WiFi Antenna of the raspberry Pi as a EMR Sensor, gathering information of all the WiFi Hotspots available in the surrounding areas such as their ID's and the Power of the signals. The GPS sensor allows to detect information about location of the measurement, thus allowing to treat the data spatially during the future analysis.

The lower devices are artifacts known as SDR's or Software Defined Radios. As the name tells, these devices are powerful tools in order to spy into the Hertzian Space. They are provided with electronics that allow them to monitor defined ranges of electromagnetic waves in realtime. Hence they can be used to either 'listen' in real time at or to record signals with high definition at any Frequency Band of Interest in their Range. They can also emit signals as well within these ranges, therefore they can be used to simulate Satellite Signals, Airplane Signals, WiFi Router Signals, RF Keys and so on. They are well know tools in software testing and hacking and criminal practices.

The NESDR is a compact SDR that allows to listen between the range of ... Hz to ... GHz. The HackRF One is more sofisticated and allows a wider range for reception and transmission, as well as wider bitrates for monitoring and recording.

During my work at the residency, and bakc in Zürich I conducted recordings in diverse setups. In parallel I started building a robotic radio telescope that will allow me to make threedimensional radiographies of the electromagnetic space. I have the intention of continuing with this work in order to collect more detailed imagery and 3Dimensional Data.



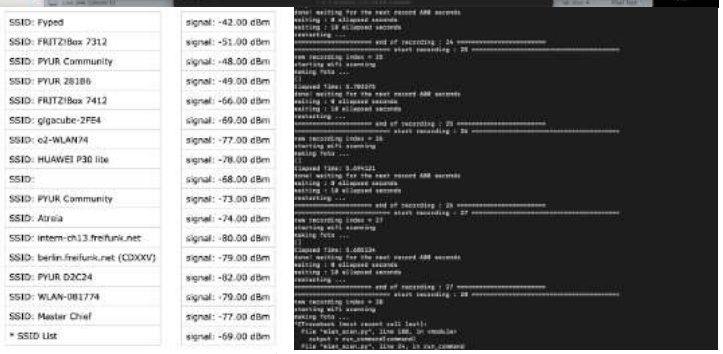


Screenshots of my SDR Explorations

under this links you can see video recordings of the SDR Software at work

https://youtu.be/LZyQ2jBVgxg

https://youtu.be/Ry6LpSUFm_M



Images showing what you don't see and the device is doing: Taking a picture and recording the wifi signals at a certain interval.







berlin

field
recordings





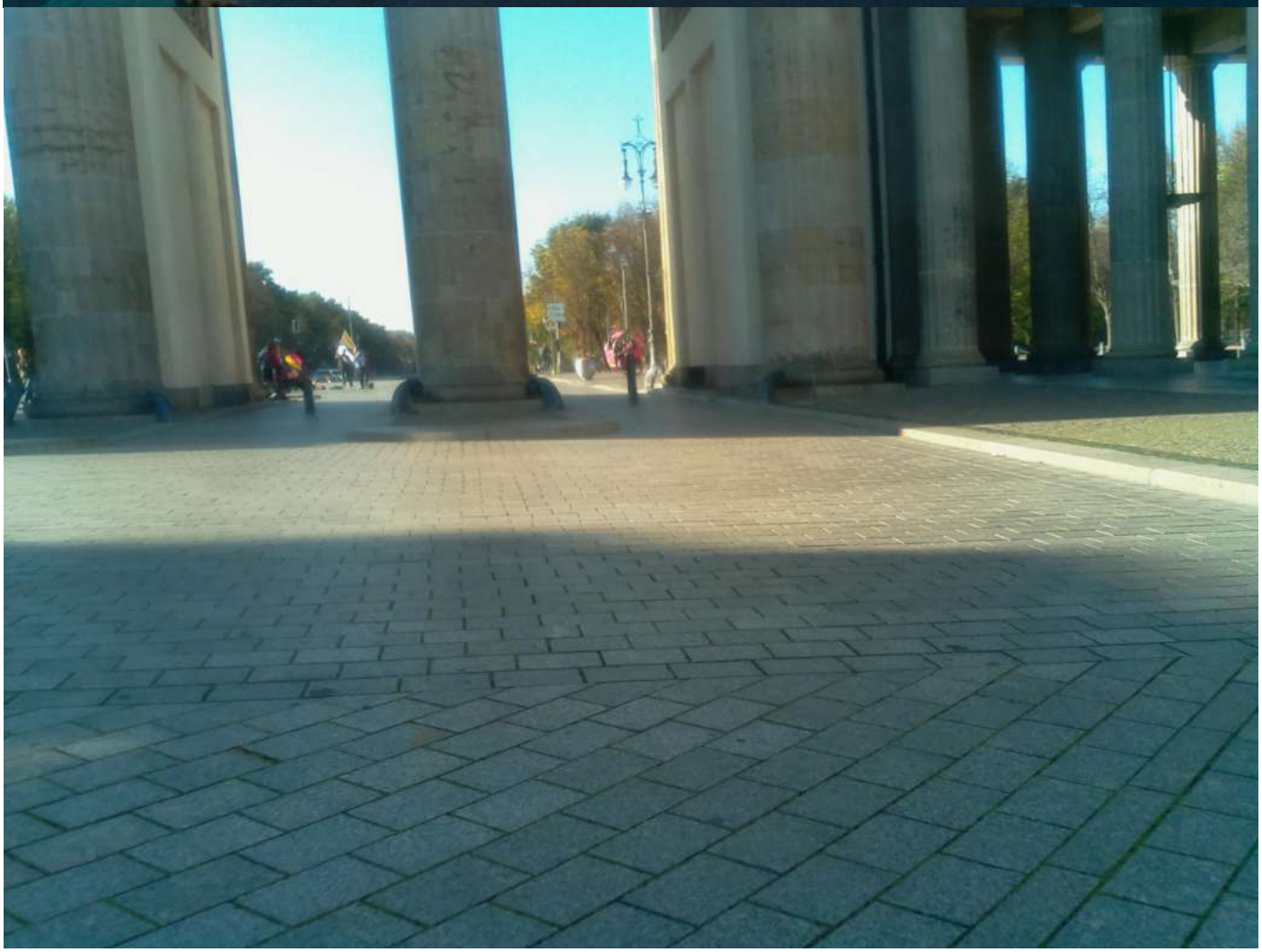

ADMIRA
BAHNHOF FRIEDRICHSTRASSE

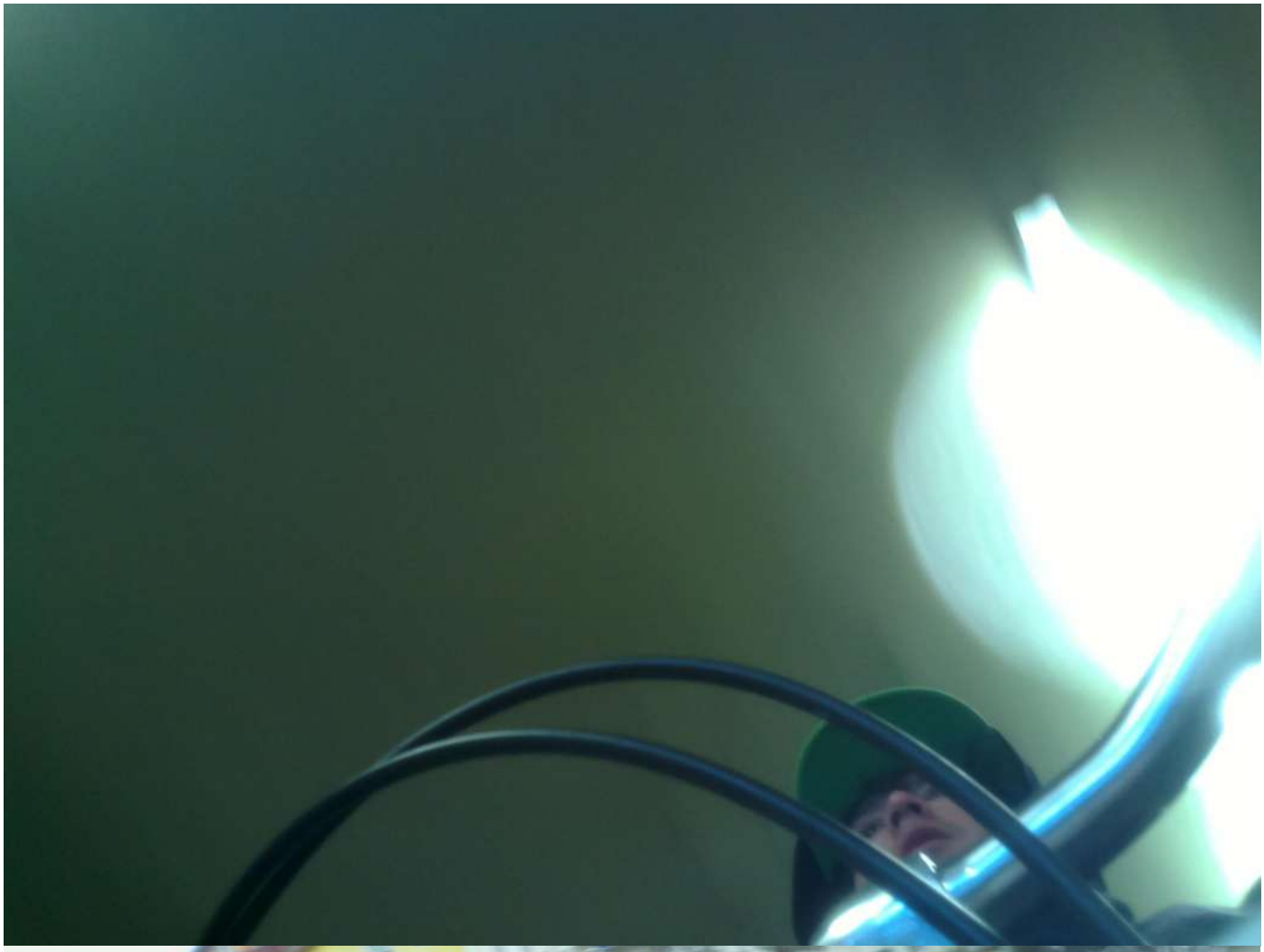




















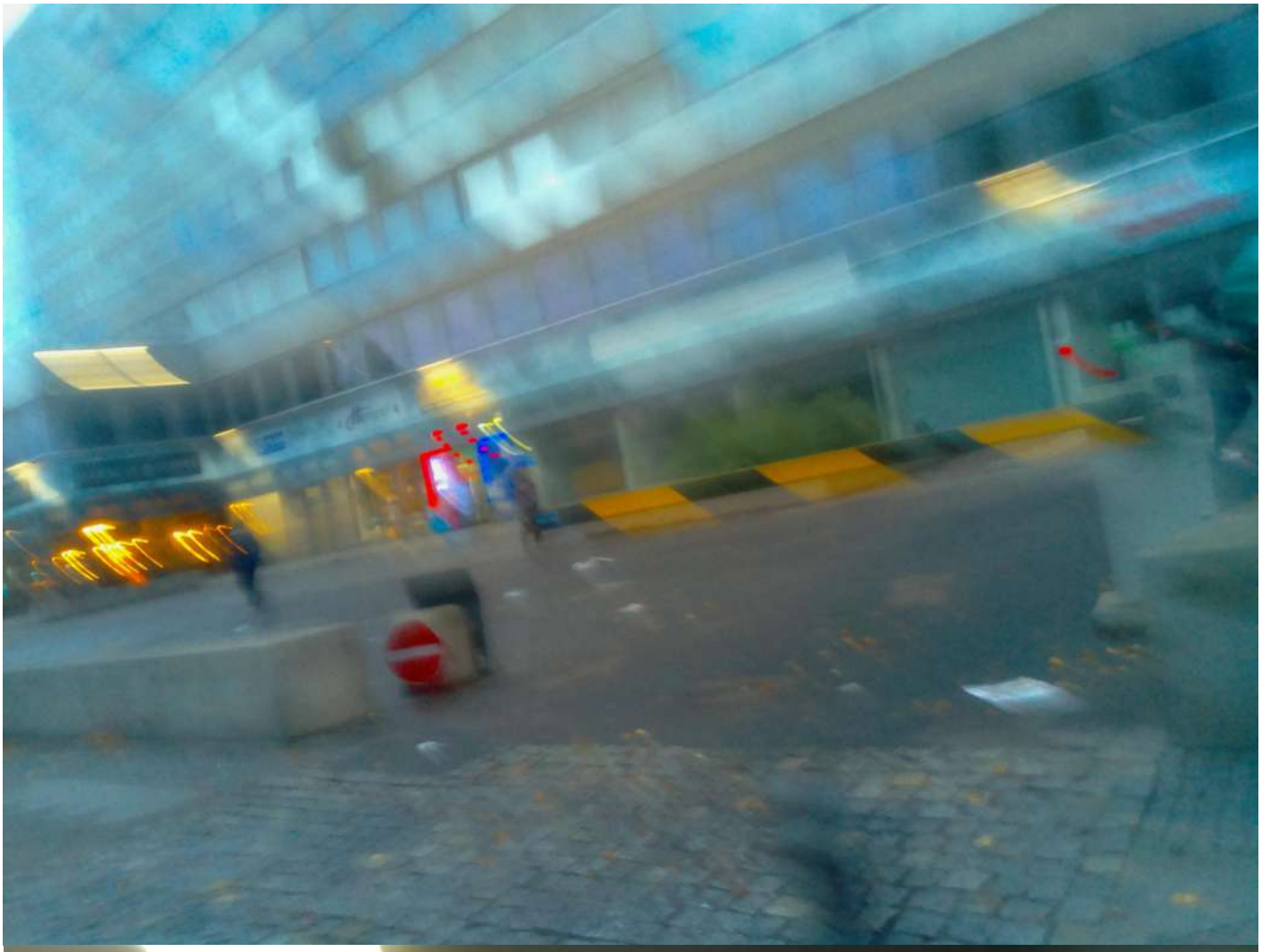


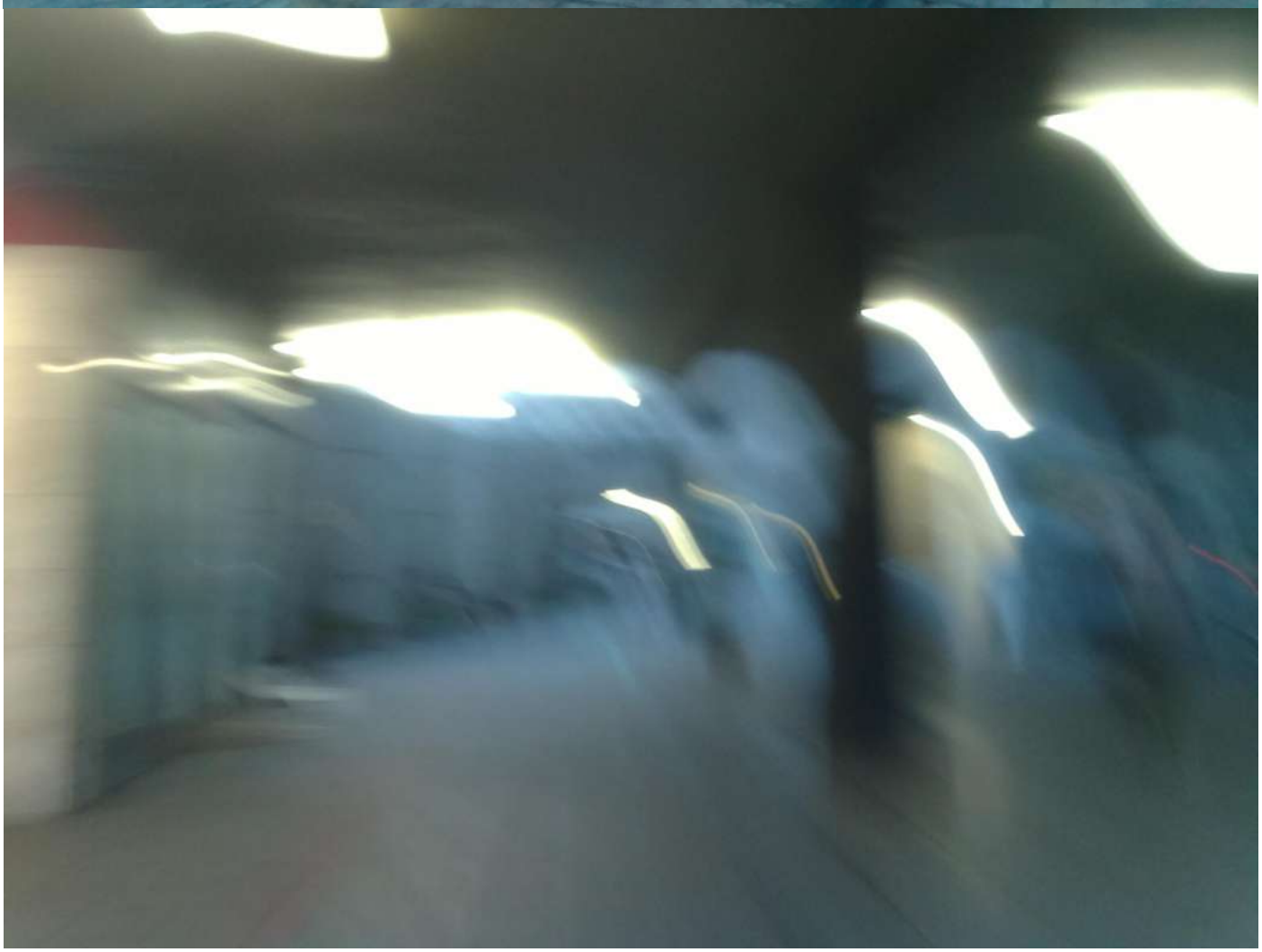










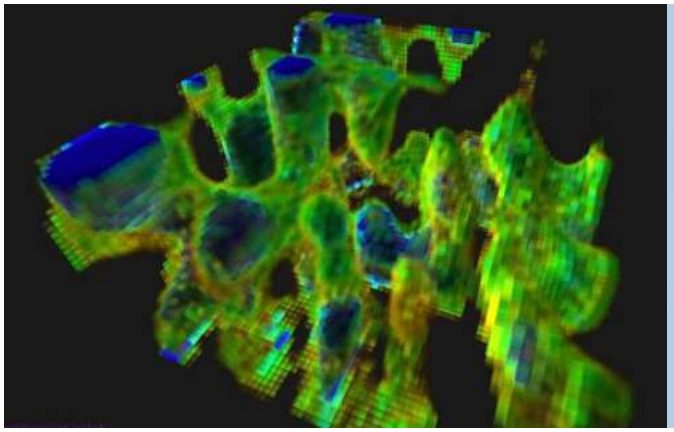



52.503877,13,384772
0.000005mW, -52.600660dBm
Anhalter Bahnhof
Rent a Bike Berlin
Home Berlin
Ahorn-Club TSA
im PSV Berlin eV
Basement Boulderstudio
Lidl
Fressnapf
Berlin-Kreuzberg
Pet store
Askanischer Platz
Anhalter Bahnhof
Sportplatz
Anhalter Bahnhof
SSID: 5guest signal: -60.00 dBm
SSID: gigacube-9439 signal: -73.00 dBm
SSID: TLP-HOSTEL signal: -75.00 dBm
SSID: TP-LINK_9EB144 signal: -78.00 dBm
SSID: Heide-Schopf signal: -68.00 dBm
SSID: EasyBox-275803 signal: -75.00 dBm
SSID: VODAFONE-B3500-355E signal: -80.00 dBm
SSID: BarisBerat signal: -77.00 dBm
SSID: TC-878E5 signal: -69.00 dBm
SSID: PYUR Community signal: -68.00 dBm
SSID: skootme signal: -73.00 dBm
SSID: WLAN-372990 signal: -61.00 dBm
* SSID List signal: -73.00 dBm
SSID: o2-WLAN27 signal: -69.00 dBm
SSID: PYUR 89B54 signal: -68.00 dBm
SSID: PYUR Community signal: -76.00 dBm
SSID: ASTER_2.4G signal: -72.00 dBm
SSID: CarasKitchen signal: -70.00 dBm
SSID: PYUR Community signal: -73.00 dBm
SSID: PYUR Community signal: -78.00 dBm
SSID: TLP-HOSTEL signal: -79.00 dBm
SSID: EasyBox-0ADA56 signal: -72.00 dBm
SSID: o2-WLAN75 signal: -77.00 dBm
SSID: o2-WLAN55 signal: -70.00 dBm
SSID: TC-BE877 signal: -65.00 dBm
SSID: TC-74971 signal: -67.00 dBm
SSID: PYUR Community signal: -74.00 dBm
SSID: PYUR Community signal: -75.00 dBm
SSID: PYUR Community signal: -73.00 dBm
SSID: EasyBox-0B4B14 signal: -68.00 dBm
SSID: Neonlicht signal: -81.00 dBm
SSID: TLP-HOSTEL signal: -70.00 dBm
SSID: PYUR 32B4A signal: -72.00 dBm
SSID: PYUR 010F5 signal: -76.00 dBm
SSID: o2-WLAN48 signal: -83.00 dBm
SSID: FRITZ!Box Fon WLAN 7320 signal: -82.00 dBm
SSID: dlink signal: -64.00 dBm
SSID: WLAN-103431 signal: -67.00 dBm
* SSID List signal: -74.00 dBm
SSID: Telekom_FON signal: -76.00 dBm
* SSID List signal: -80.00 dBm
SSID: PYUR Community signal: -72.00 dBm
SSID: o2-WLAN80 signal: -65.00 dBm
SSID: PYUR Community signal: -68.00 dBm
SSID: FRITZ!Box 7412 signal: -73.00 dBm

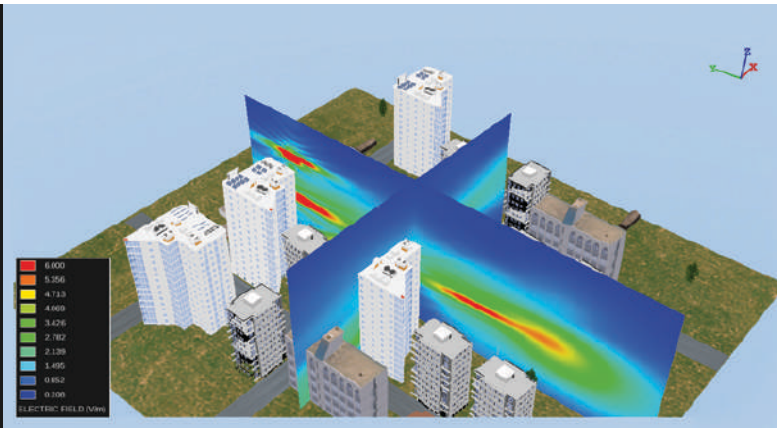

52.516350,13.379796
0.000002mW,-58.098046dBm
SSID: Vectron signal: -73.00 dBm
SSID: gigacube-4D24 signal: -69.00 dBm
SSID: MKT-00186577 signal: -74.00 dBm
SSID: Conference signal: -73.00 dBm
SSID: EPLO Berlin signal: -74.00 dBm
SSID: Besucher Erlebnis Europa signal: -74.00 dBm
SSID: SX_Smart Start signal: -74.00 dBm
SSID: EC_REP_EXT signal: -72.00 dBm
SSID: Audi_MMI_6647 signal: -76.00 dBm
SSID: KEMPINSKI signal: -71.00 dBm
SSID: Conference signal: -75.00 dBm
SSID: island-10AE70 signal: -74.00 dBm
SSID: EC_REP_EXT signal: -79.00 dBm
SSID: ECRep-Staff signal: -78.00 dBm
SSID: SGEU00 2.4G signal: -73.00 dBm
SSID: Carl Robert signal: -73.00 dBm
SSID: signal: -62.00 dBm
SSID: GUEST signal: -88.00 dBm
SSID: ECRep-Staff signal: -74.00 dBm
SSID: KEMPINSKI signal: -79.00 dBm
SSID: Conference signal: -77.00 dBm
SSID: signal: -75.00 dBm
SSID: 4901O signal: -76.00 dBm
SSID: Pariser signal: -82.00 dBm
SSID: gigacube-97A4 signal: -78.00 dBm
SSID: ActiveImage signal: -79.00 dBm
Spree
ARD-Hauptstadtstudio Berlin
Madame Tussauds Berlin
Temporarily closed
Brandenburger Tor
Botschaft der USA (Kanzlei, nicht Konsulat)
Unter den Linden
Behrenstraße
Französische Straße
Denkmal für die ermordeten Juden...
Fuhrerbunker
Hannah-Arendt-Straße
Wilhelmstraße
Ebertstraße
Jägerstraße
Mittelstraße
Dorotheenstraße
Scheidemannstraße
Der Pfefer
Skulpturengruppe (Global Stone Project)

topographies

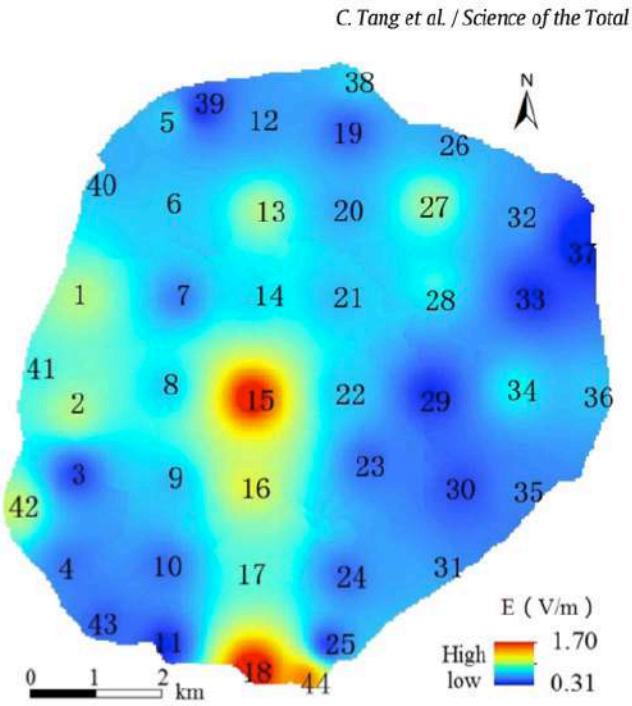
forms of deceiving (or representing)



Heat Maps of EMR as
Voxelization of punctual
measurements in a 3D grid



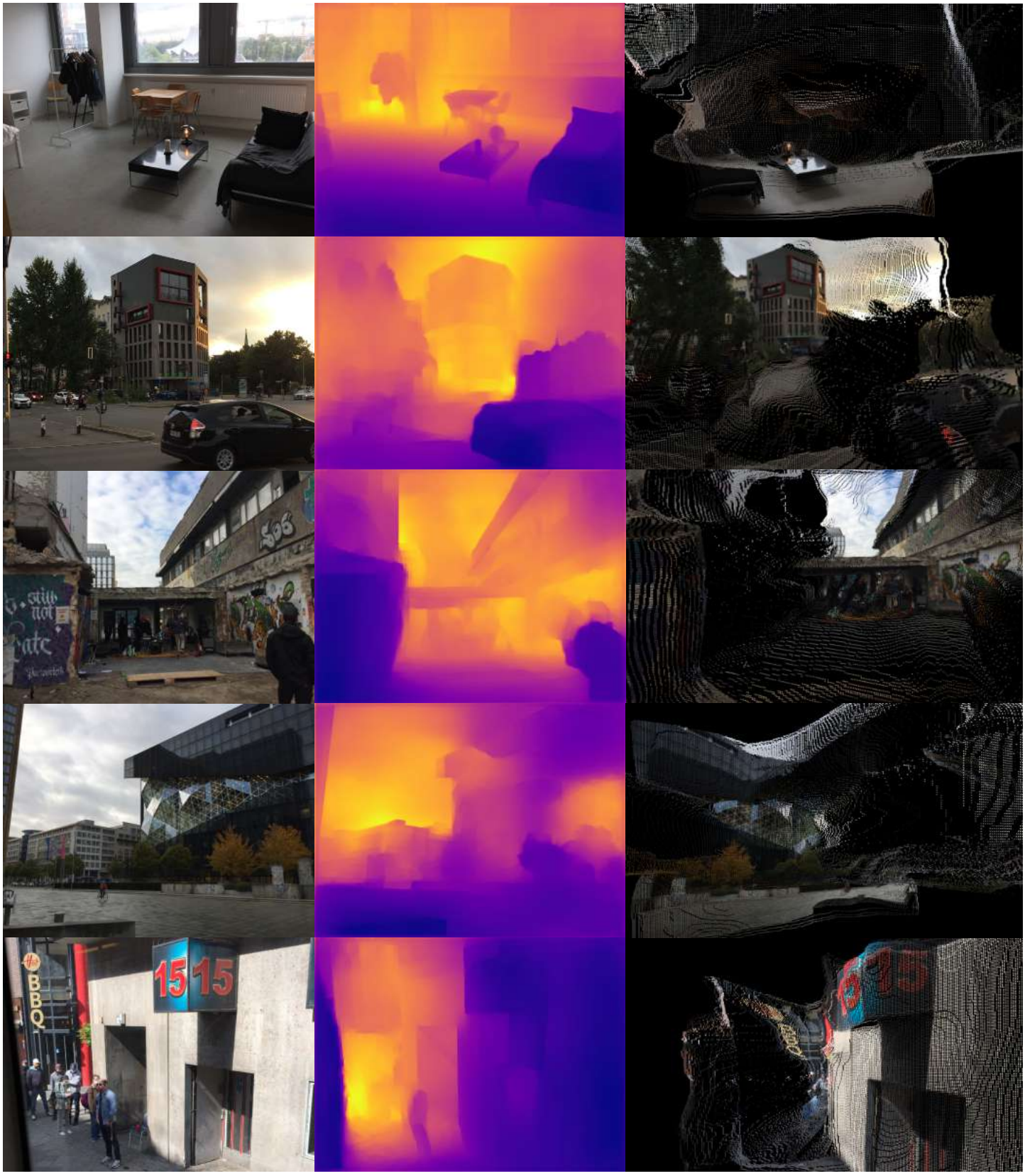
Heat Maps of EMR over
Perpendicular 2D Cartesian Planes



Heat maps of EMR
distribution in 2D Planes

During the following period after leaving Beling I have been exploring possibilities of analysing the Data and representing it. What else can we see or learn from the distribution of electromagnetic radiation? What else are we missing? These images present some approaches that I have applied.

Another important aspect is the recreation of the context in which the measurement was taken. I explored already the possibility while I was in Berlin of reconstructing the space from a monocular image, that is from a single 2D image. Using the help of machine learning tools that enable to generate Depth Maps from single images I wrote a simple program to do this. Depth maps are similar to Heat Maps, but as the name says, they tell you how far the regions are from the viewer instead of their temperature. This allows you to generate a point for each pixel in the image and know their relative distance to the viewer.



Pictures from Berlin
Taken with mobile phone:

1. Flat at Stressemanstr.
2. U Kleistpark
3. Haus der Statistik
4. Axel Springer Neubau
5. Casino Kochstraße

Depth Maps of the Images calculated with a Deep Learning Model. I wrote this algorithm in Colab - cloud computing service based on Jupyter Notebooks offered by Google for writing and running machine learning algorithms.

Three-Dimensional Reconstruction of the Places using single images and the Depth maps. I wrote this simple algorithm in JAVA. You can see one of the animated results as video files through the LINKS here:

https://youtu.be/1qBfXF738ko
https://youtu.be/6DoTasIVfU0
https://youtu.be/_9dfcVlWKNA

arrh ythmia

essay for a
radio show

There are patterns of arrhythmic dysfunction circulating on the web. A meta-disease is rapidly weaving itself throughout the Hertzian Space. The Hertzian Space is an ocean flooded with devices. Objects. Better framed: Meta-objects that possess the ability to transmit and receive information. Meta-objects exist in a paradoxical condition: they are Information and they trade information. Every bit of a meta-object that is transmitted is a latent new meta-object that resembles an origin, and that is compatible with an unknown destination.

The Hertzian Space is not human-made. The Hertzian Space has a strange nature as other phenomena that exist in the universe. As Light and Gravity, Electromagnetism has no owner. Humans found their ways through the Hertzian Space, a while ago, and they labeled it. Since then, they have worked hard to colonize and to weaponize it.

A human, male, german, short-lived, named Heinrich Rudolf, born in 1857 in Hamburg, posthumously lent his family name to describe the Unit which is used to measure the frequencies at which electromagnetic waves oscillate. Heinrich Rudolf Hertz departed from the collective work of other scientists and confirmed for the first time that electromagnetic waves exist. His work has been the foundation for future telecommunication technologies such as radio, tv, wi-fi, satellite communication, and radio telescopes.

May I say, 'Poor Heinrich, you were brilliant, refined, privileged, white, and young'? You didn't live enough to see that the door you opened changed the world forever. At an early age, you started suffering from heavy migraines and a strange sickness emanating from your skull. It is presumed to have been cancer by some historians and many internet bloggers. At the age of 36, the metastasis killed you. Perhaps it eases your sorrows to know, that this has been the fate of other early brilliant and productive scientists, who after you, dealt passionately with electromagnetism and radiation. To carry in your memory both the burden of glory and destruction.'

'Maybe you paid with your lives for the whole of humanity to get access to the sacred. Or maybe you paid with your lives for all the sorrows that your knowledge would bring upon humanity. Or maybe it has been all a subject of naivety and a lack of foresight, that led you to be untroubled while investigating these unknown terrains.'

Dear listener, you may already know this, but the Hertzian Waves, in essence, don't differ from apparent light or ionizing radiation, popularly known as nuclear radiation. As light, they propagate at a constant speed infinitely through vacuums or empty spaces. With enough energy, they can travel through Matter, such as a wall or your body.

The Hertzian Waves can disrupt matter and interact with other waves in diverse ways. But their effects variate significantly according to their energy level and the resonance of the matter with which they interact. To this, there is still a lot to be discovered, but it is only ok enough to say, that the problematic aspects of the electromagnetic waves are not as big of a threat to the human body as they are to the collective. The air space that the Hertzian Waves inhabit is naturally crowded. Hertzian waves are emitted by the sun, by the stars, by blackholes, by galaxies, by stardust, by the big bang, as well as each of the atoms and subatomic particles that are and vibrate in the universe. Hertzian Waves are in this broad sense the propagating voice from everything that is. Now, we could distinguish between naturally existing and human-made waves. An artificial electromagnetic signal, a human-made Hertzian wave to be explicit, is the result of an oscillating voltage accelerating and de-accelerating at a sinusoidal rate, across a special type of wire known as a dipole. An antenna that looks like an odd tuning fork. This causes an electromagnetic field to oscillate exponentially and detach itself from the source to start an eternal voyage to infinity.

The Hertzian Arrhythmia occurs when the electrical impulses that coordinate Hertzian pulsations stop working properly, causing information to travel too fast, too slow, or unequally. A Hertzian Arrhythmia may feel like a collective of racing and anxious hearts. A Hertzian Arrhythmia may be harmless. However, some arrhythmias may cause life-threatening signs and symptoms. All around the global human-made Hertzian Space, there are artificial pacemakers. They are responsible for emitting new waves, repeating older waves, or stabilizing information arrhythmias. These pacemakers have evolved through years of scientific and military efforts as well as industrial processes, and are replaced rapidly by newer creations. These pacemakers are generation after generation, smaller, more complex, and able to amplify, emit, and receive a wider range of the waves moving within the Hertzian spectrum.

The Hertzian arrhythmia also occurs when the waves moving within the Hertzian spectrum affect the environment in uneven ways. It occurs when information travels unnoticed by the big majority of the ones who produce it. Hertzian arrhythmia is, so to say, a symptom of power. An imbalance between senders and receivers. A form of securing that not everyone has access to the same medium and the content flowing through it, and not everyone benefits from it. Since the early days of radio transmission, the Hertzian Space is a battlefield and a market. A place where information can spare or doom lives. Thus, since the early days of radio, encryption and jamming are tactics needed to maintain any foe interests behind the curtain.

Urban Pacemakers look like the old TV Antennas, or the Radio Antennas, but with a more sober, modern, and oppressive design. Why are they oppressive? Because you can't always see them. And because when you see them you don't recognize them. You don't know how and when did they get there. Who brought them there? How do they operate? What kind of transmissions travel through them?

Sometimes they look like concrete blocks sitting next to the bus stations, or spiders parasitizing on the street lights, or lifeless trees sitting lonely at the roof of every other corner's building. They are oppressive because they are above us, floating in the air, at low orbits, being tested, using everything around them as probes, waiting for their iterations and next generations to populate the entire skies with artificial stars.

The Hertzian humans speak in favor of acceleration. They suggest that the current of technological progress is too strong and any form of resistance and critic is in fact, counterproductive. The Hertzian humans speak of the death of the old worlds, and the death of the old world's gods and goddesses. The Hertzian goddesses and gods are Science, technology, democracy, progress, profit, growth, fitness, youth. Anything else, that opposes the Hertzian ways, or insinuates any form of resistance, is immediately recognized as:

A. Esoterism, B. Nonsense C. Threat D. Paranoia E. Terrorism F. Conspiracism

The Hertzian creations are meta-objects that have learned to see and to listen. They also learned to speak and to create, and trade, and write. Presumably, they are not yet capable of surpassing the capabilities of human brains in all their potentials. And yet, some of them have more power and more rights than at least half of the humans who inhabit this planet. Today, they teach humans how to see and how to listen. They determine the value of things. They tell humans how to behave and how to think. They mine their steps. They nourish from the Hertzian Spaces that humans inhabit and the ones that they don't yet inhabit. They communicate, embody, and move through the highspeed signals, encrypted, around humans. Their language is loud, though human ears and minds are deaf to their words.

Human bodies are naturally Hertzian. Human brains emit the same kind of electromagnetic waves but at much lower frequencies and weaker energies. Human bodies are undergoing a process of hybridization. Human organs will be enhanced, and in some cases replaced by artificial devices on a mass scale. The modern Heinrichs who are populating the skies with apparent artificial stars that will provide satellite highspeed wireless networks to the entire world will soon deliver us the keys to artificially interfacing with our brains, even before we manage to fully interface with them naturally. Human cybernetic bodies will be from then on infested by artificial Hertzian organisms. Microscopic machines will communicate at faster speeds than those at which human bodies can perceive and regulate themselves. The work of this modern Heinrichs will keep on expanding into outer and inner spaces. They will keep on colonizing the solar system, near stars, organs, with microscopic high-speed miners. These artifacts will fill up physically and virtually the material gaps within cells and atoms, and they will regulate them and trade with their activities. Why should we stop with the exploitation of individual humans when there are 30 trillion cells in each human body?

One day cells will be bolder and will evolve. The evolution will be a passive way of unification and emancipation from their microscopic miners and the traders that have invaded their spaces leading to the precarization of the bodies. They will evolve out of boredom of being exploited silently. Cells will stop operating the way they do and perhaps will find their way back to their older bodies to their older worlds.



Multiple communication technologies in one street antenna. Picture taken in Zürich, December 2020.

trees

imaginary
work

25.9.2020

I am trying to nail down some objectives for the residency during these months. I can already mention two experiments and three observation methods

A - A radio telescope tuned to 2.4 GHz to make 3D scans of the signals around a spot

B. Wi-Fi heat maps of Berlin. Walk around with the ESP 32 or the RBP: and collect that data — Wi-Fi BB move more or less in a grid way.

C Wi-Fi 3D heat maps from rooms. Similar to B but in a smaller scale, more detail, and in 3 dimensions.

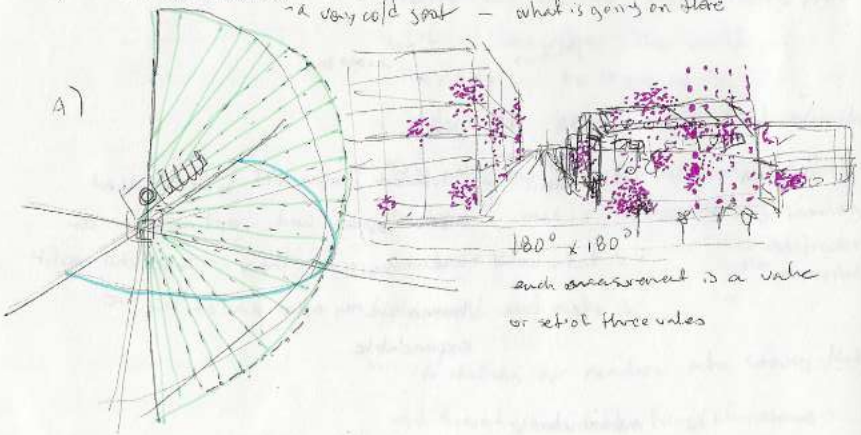
D. Historical aspects behind the radio-communications and stigmatization / reality > social and cultural aspects behind. economical and political

E or look for a very hot spot and make an ethnographic what is going on there

or look for

F Point Clouds manual - of the City scapes
- a very cold spot — what is going on there

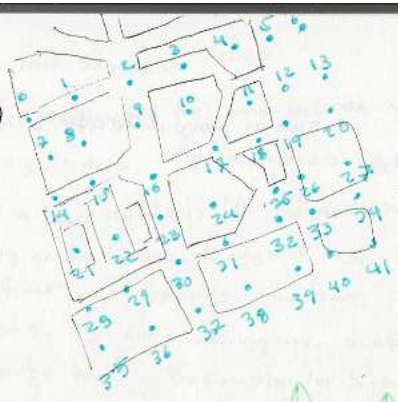
A)



180° x 180°

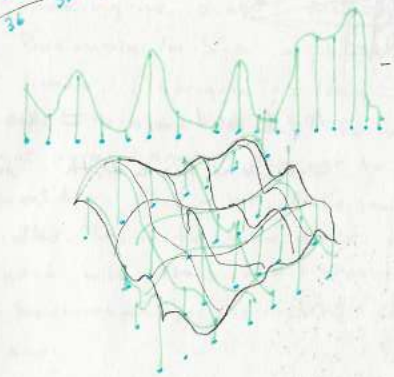
each measurement is a value or set of three values

B)

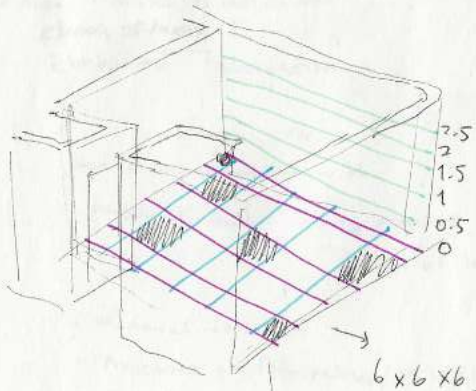


- go walk in the city
- try to get inside the buildings
- do the recordings
- take some pictures
- try to be precise - where you stand to make the measurements
- set on top of the roofs

B)



C)



So in a room

move from left to right in intervals of one small step - 0.5m

move in line horizontally/front reveal motion one small step to the right.

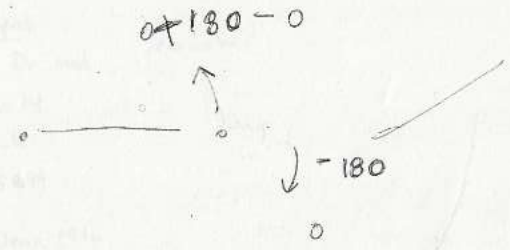
do the whole thing holding devices increasing heights 0.5m

6 x 6 x 6 = 216 measurements

3 heights = 15 measurements

voxelize the measurements



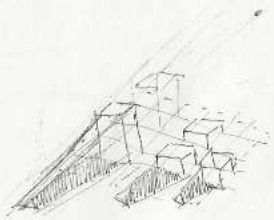


Standard Deviation – to calculate sharpness

or

$$\sigma^2 = \frac{\sum (x_i - \mu)^2}{N}$$

Cumonts Expansal



σ population standard dev

N = Size of the population

x_i – each of the values from the population

μ = population mean

$$\mu = \sum (x_i) / N$$

"Forensics of Reparation"

Naomi Klein, The Shock Doctrine

9 2 5 4 12

"Externalities" → Concept in Economics

"money doesn't turn into commodity on its own. For that you need labor" →

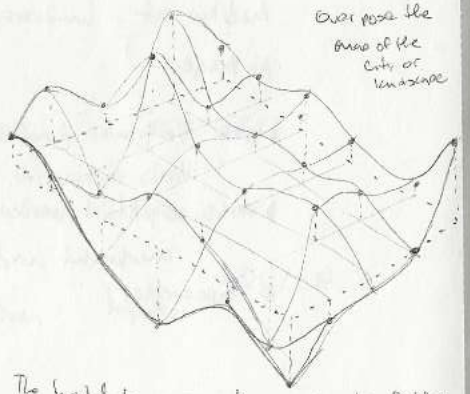
"world's Ecology"

"Anthropocene - nonsense concept"

"Capitalocene" — the ideology of the cheap —

W.F. Signals with ESP32

Heat Map of the W.F. transistors



The height here is the intensity of the signal.

Tom Fuchs (Aufgaben) – Kontaktieren

- Data Base mit Projekte an diese selbe Punkte
  Daten von Crowther Lab
  Legende für Projekte
- Bugs > Flickern von Objekte
- Slide shows
- Navigation
- Studierende unterstützen bei Umsetzung

Luke

→ GeoTiff – Data

Aligning the Map Projection

Three.js > P5 JS

- Interaktionen zwischen Objekte und Punkte → Automate the SVG / Vectorisation of the map
- Sprunge / Winkel

Visible / non visible

POI.js

Line 45 isVisible( ) { }

Info Tag > Tisch

- E-mail to the group with the link (Fr.) / Repository / People can put the
- Feedback for the organisers – write it down
  cooking and so on
  - a lot of distractions
  - and energy taking activities
  - random activities like the toboggan

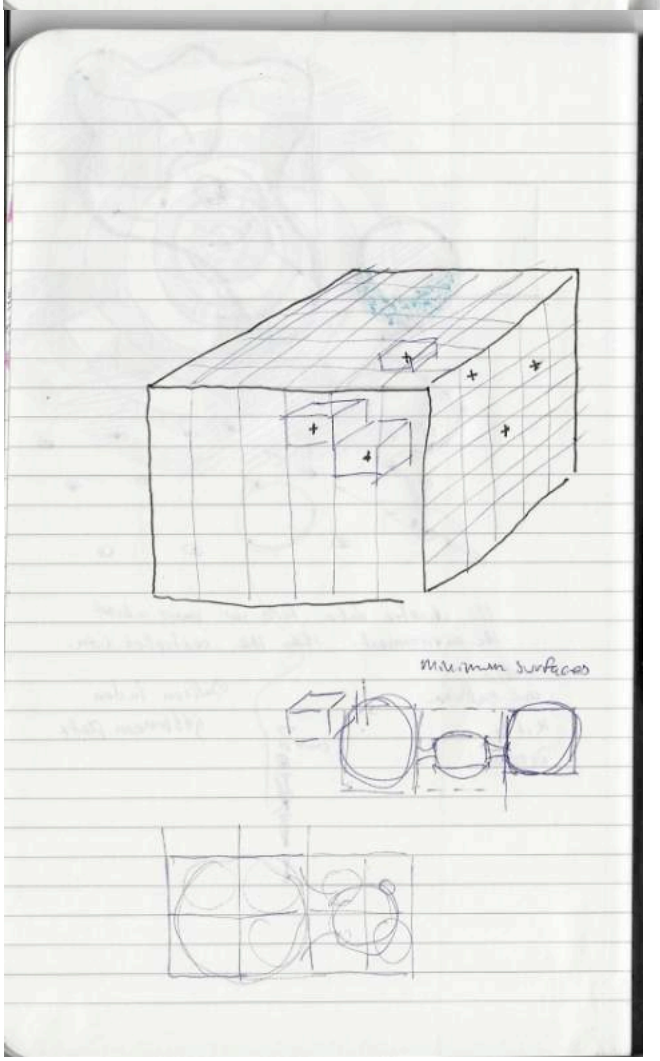


C

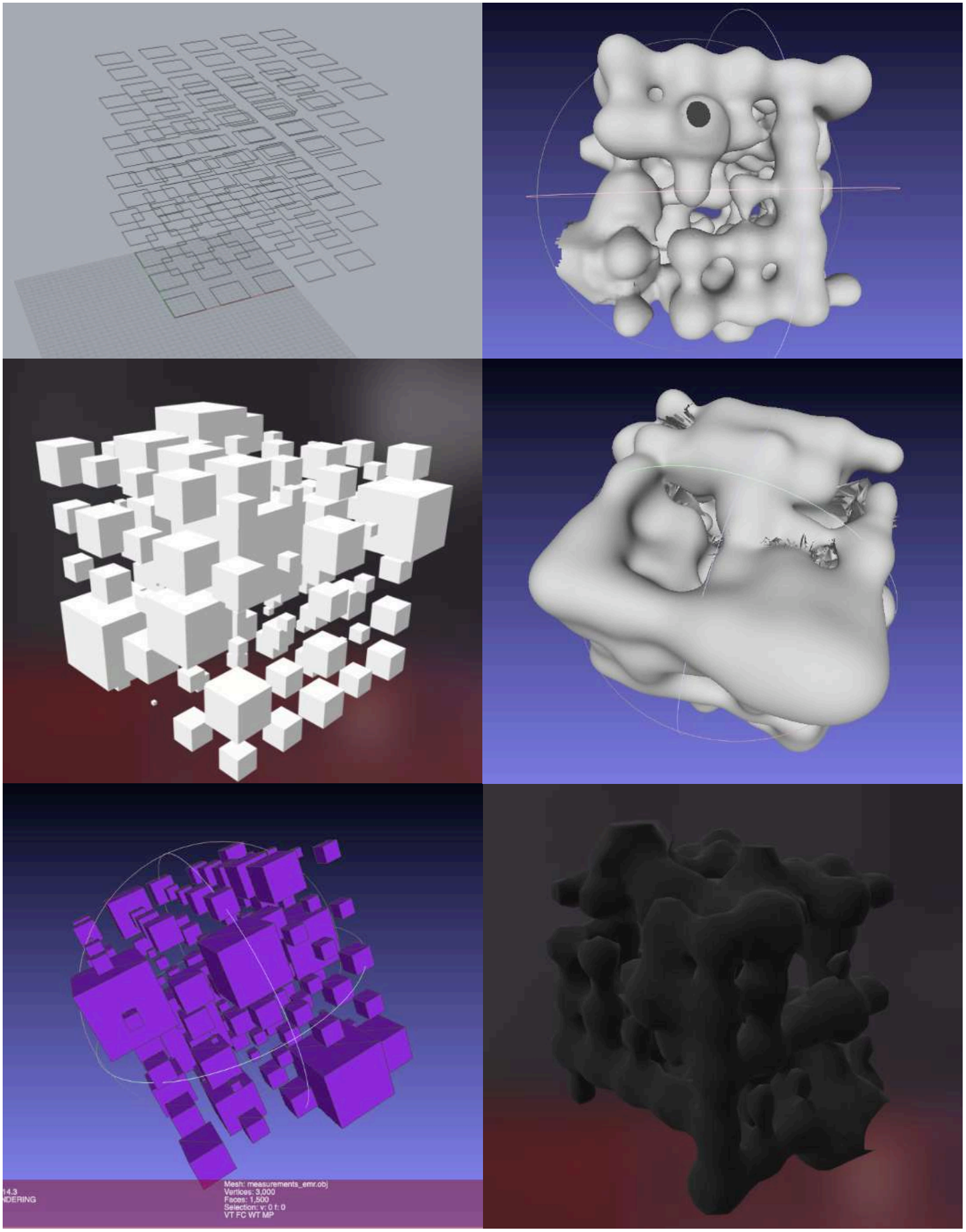
Quiet Sleeping Corridor

- Feedback for us
  - a bit too ambitious / reducing some activities

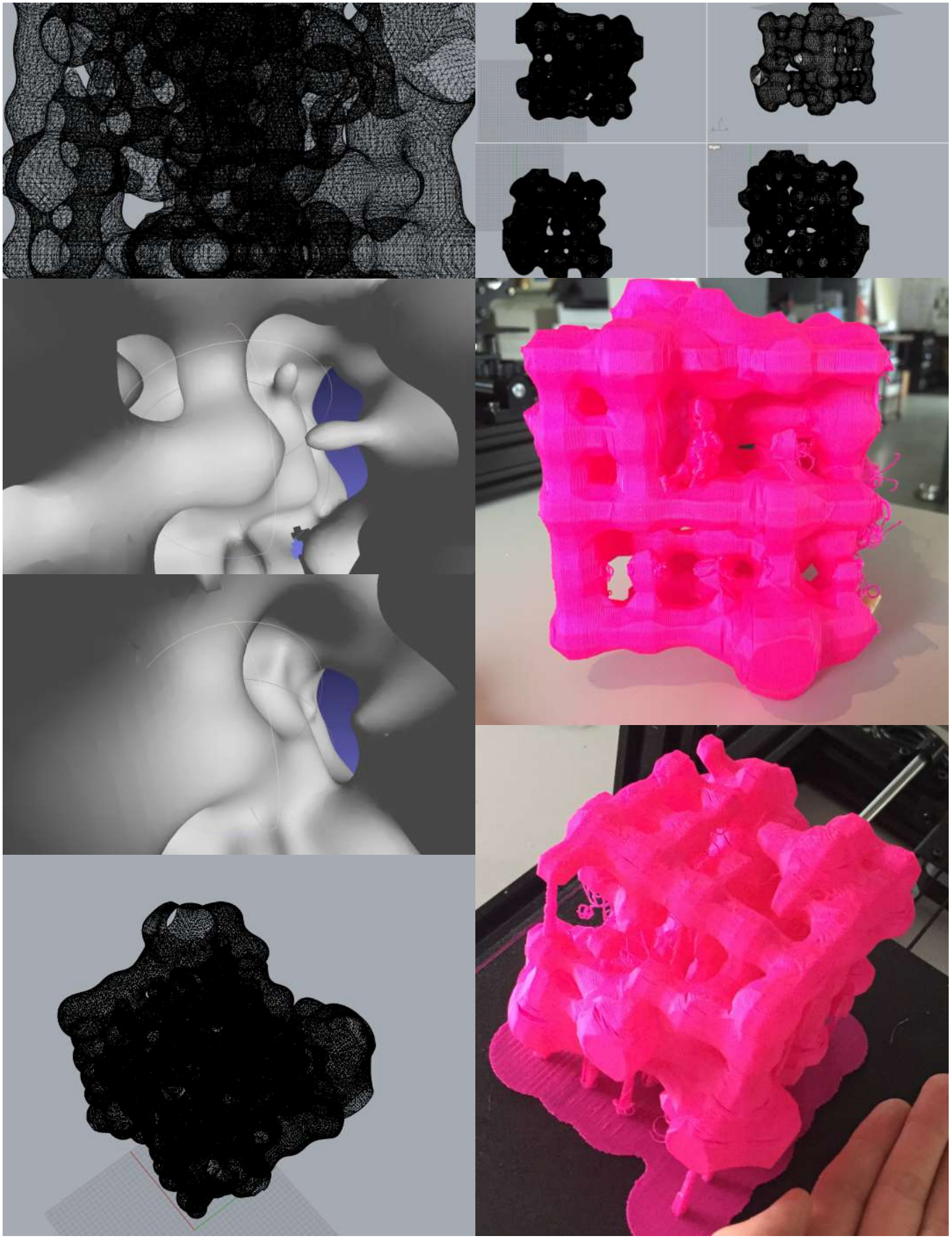




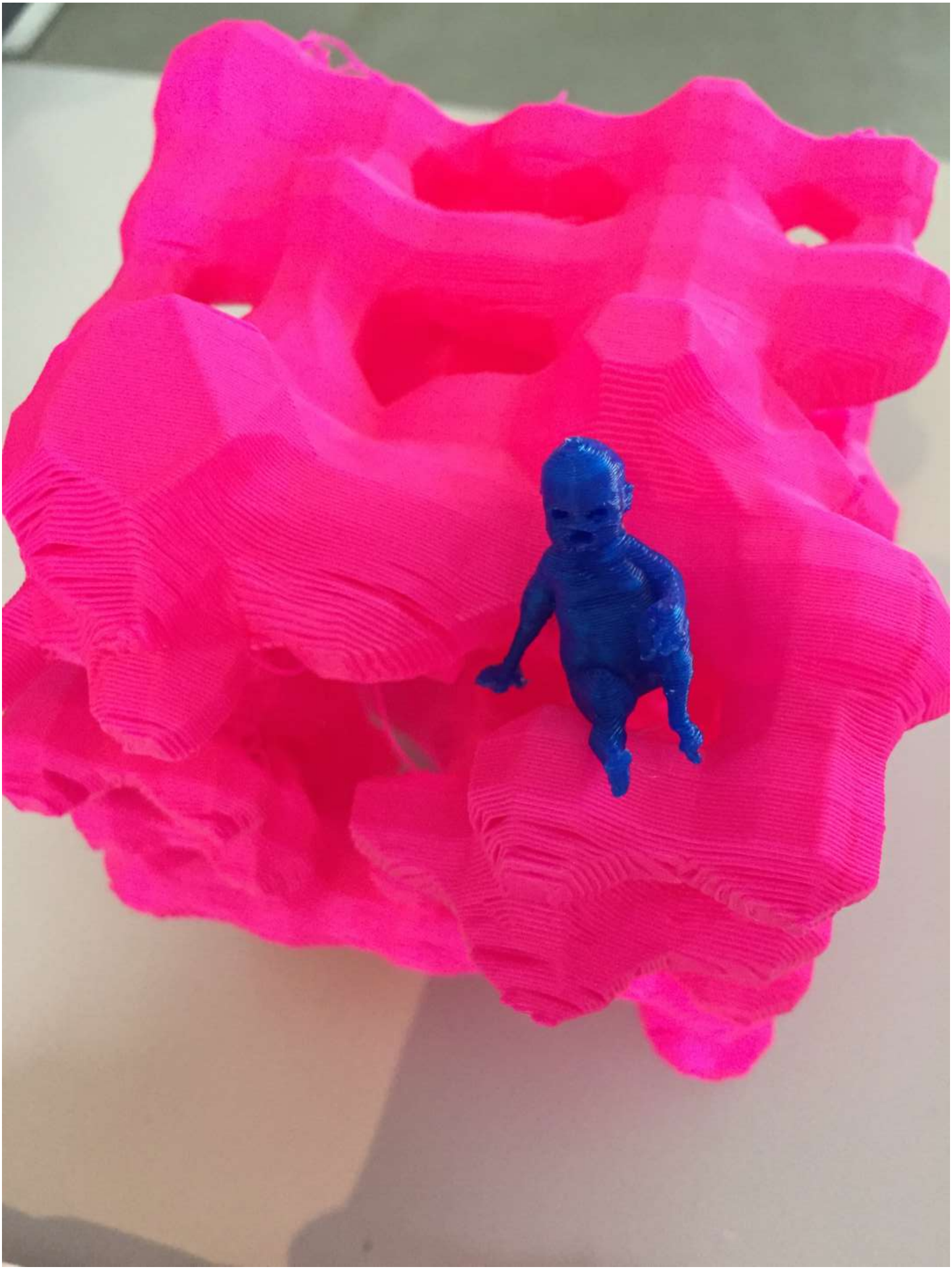
This are sketches of Measurements of Electromagnetism distributed in a 3D grid. After the collection of the data, a voxelization of the data - points allows the fabrication of a 3-Dimensional Space or Tangible Image of the Electromagnetic Field. I Collected this measurements experimentally by hand in closed spaces, and currently I am working on two systems for measuring EMR in space in a more controlled manner: One is with the use of a human walking on a 2 dimensional grid and realising in intervals a helium balloon carrying a sensor. A second one is using a Drone. In the following slides you can see the materialization proceeding of the measurements.



Voxelization of 3Dimensional measurements



3D Fabrication



3D Fabrication

references

These readings were supporting my residency time in Berlin:

Boris Groys. In the Flow.

Armen Avanessian. Akzeleration.

Paul Virilio. Open Sky.

Hito Steyerl. The Wretched of the Screen.

Raj Patel & Jason W. Moore. A History of the World in Seven Cheap Things.

Franco Bifo Berardi. The uprising: on poetry and finance.

Franco Bifo Berardi. And: phenomenology of the end.

Edgar Morin. Homeland Earth: A manifesto of the new millenium. Advances in Systems Theory, Complexity and Human Sciences.

Louis Amoore. Cloud Ethics. Algorithms and the Attributes of Ourselves and Others.

Italo Calvino. Die unsichtbaren Städte.

Scott McQuire. Geomedia. Networked Cities and the future of Public Space.

Henri Lefebvre. The Urban Revolution.

Henri Lefebvre. Metaphilosophy.

Georges Perec. Species of Spaces and Other Pieces.


A History of the World in Seven Cheap Things
A GUIDE TO CAPITALISM, NATURE, AND THE FUTURE OF THE PLANET
Raj Patel & Jason W. Moore
Edgar Morin
Homeland Earth
Franco "Bifo" Berardi
AND
PHENOMENOLOGY OF THE END
Hito Steyerl
The Wretched of the Screen
Futurability
The Age of Impotence and the Horizon of Possibility
Franco 'Bifo' Berardi


a very short
one