I am Eleni Kanellaki, I come from Greece and I have studied physics in the Aristotle University of Thessaloniki. During my studies and while we had these special conditions due to the corona virus, in 2021, I decided to apply to DESY for the summer school. I had never thought of going abroad and that year the summer school took place remotely, so it was easier for me to dare. In general, this was the reason that I wanted to share my experience with you today, because although I started a little scared, taking a small step outside my comfort zone, and not believing much in myself and my abilities, the people at DESY helped me a lot, they taught me things, they were supportive of me and I owe a big part of where I am today to them. So, I would like to thank them, and especially Stefan Ohm, Dmitriy Kostiunin, Annanay Jaitly, Robert Daniel Parsons and Gernot Maier.

My project at DESY was about the composite supernova remnant Kes 75 and involved using a new Python library, called gammapy. I remember that when Stefan was away on vacation, Dmitriy was learning gammapy with me so he could help me, and I found it so sweet, thank you. We reanalyzed Kes 75 and the results were compared to the H.E.S.S. data, they were consistent, it was detected in the VHE range, the TeV source was point-like and its position was compatible with the pulsar wind nebula, but there was no evidence for a supernova remnant emission. You can see the two beautiful plots that we had produced using gammapy and I was very excited about them.

The spectrum was well represented by a power-law, but the spectral fit was slightly different comparing to HGPS, as you can see in the image. This had to be studied in detail, but I don't know if anyone continued my project and we have more information now. And in general, the truth is that due to the circumstances I have never been in close contact with all these people who helped me so much and I have not even visited DESY or Zeuthen. Even today I can't talk to you about all this myself because I have coronavirus and I'm having a hard time. Hopefully, sometime in the future I can visit this place and meet all of you in person.

At the same time I was working on my thesis, I worked on a dark matter detection experiment, the NEWS-G, which is a spherical proportional counter. I created a simulation of the pulses and the signals of the electrons that reach the anode, moving through the spherical proportional counter's gas, and then, using toy Monte Carlo models I produced a big number of random signals and pulses of two or three electrons, with the goal to count the individual primary electrons, as the surface events experience more diffusion than volume events, which causes a time separation. It was another project in which I used Python, I was introduced to the detector physics, I collaborated with loannis Katsioulas, and my professor and supervisor was Christos Eleftheriadis, who also encouraged me to continue my studies. And that's what I did.

So, now I am a master student at the National Technical University of Athens in collaboration with the National Centre for Scientific Research, Demokritos. When I passed all my courses and only my thesis was left, this time I applied to go to CERN. I initially started for a few months and have now completed nine months there. Tomorrow marks exactly one year since the first time I traveled to Geneva with my dad, who is always by my side and accompanies me in my new beginnings, you know, first day at school, in every grade, first day at university, first trip to live abroad...

My project there was to develop a tool for implementing automatically individual pad masking to the Pad Trigger of the New Small Wheel (NSW) muon detector in the ATLAS experiment. This time I worked with C++, so the first months I was there I devoted mainly to learning this programming language, getting familiar with the analysis of the data we get from the ATLAS experiment, and the truth is that there are still so many things that are not I know, I'm constantly learning new things and again I only know a very small percentage which is mostly related to the work I do there. So, it's a bit difficult to explain to you exactly what I'm doing, but I'll tell you a few words as best I can, it's also a

project that took us months to complete, along the way we discovered that many things were not as we thought and we had to adapt to it and improve our work. But let's start with what trigger is. Essentially, it's the selection of the most "interesting" events and reject "boring" ones so that we can reduce the amount of data we receive for analysis, as we can't deal with all of that. By adding NSW to the experiment we are able to eliminate the "fake" muon triggers. So, we have two wheel-shaped detectors, each wheel has 16 sectors (8 large and 8 small), and there are two innovative gaseous detector technologies, micromegas (MM) and small-strip Thin Gap Chambers (sTGC), which offer fast and precise muon tracking capabilities.

I work for the sTGC and in simple words, we actually have some layers of detectors, in order to accept that a muon has indeed passed, we set a coincidence and say that if we get a signal in 3/4 and 2/4 layers, a muon really passed through there. If this condition is not satisfied, we do not get a trigger. Now, the problem was that our detectors are not perfect and they have some problems, for example HV off, missing parts, in this case it is possible that if we have many dead layers, we will never get a trigger. So, masking is a process where we change a small part, an individual pad, by hand, from "dead" to "alive". Of course, this has to be done in a particular way, not overdo it because then we will get a trigger all the time incorrectly. This is somehow the logic of the tool that we developed. The result was that while before we were taking data from 75% of the sectors with a Pad Trigger efficiency around 95%, now with this tool we succeeded in taking data from all the sectors with a Pad Trigger efficiency around 98%. It was a great success for the ATLAS experiment this year and I am very happy because my supervisor, Theodoros Geralis, and me worked on it. It was another beautiful journey as in DESY, an excellent collaboration, a lot of work, of course there were feelings of stress, anxiety, frustration, but in the end we were rewarded with the joy we got from the result.

Now, I have to write my master thesis and present it to take my degree. So, this has been my path so far. Now that I sat down and wrote them down, I also realized how many and different things I have done. I am very happy for the people I met and worked with along the way, who believed in me, encouraged me to keep moving forward, pursue my dream and develop. We have chosen to make a profession very special and beautiful, there are so many different paths to follow. Finally, I would like to say to all of you don't give up, take a step back when you need to, follow your heart, do what you want, find partners in your journey with whom you communicate well and chase your dreams. But above all, believe in yourselves. Always think that no one is born knowing everything, but we can always evolve and become better. And you will see that the feeling of offering something with your work, is the most beautiful of all. No matter how small or big was your contribution, every contribution is important. The best is yet to come!!!