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Development of frequency division multiplexing readout for a large transition edge sensor array for space

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Propositions

accompanying the dissertation

Development of frequency division multiplexing readout for a large transition edge sensor array for space

Qian Wang

1. Sending / Launching a far-infrared telescope into space is costly but necessary. (Chapter 1)
2. A simulation model is a tool not a bible, so it is only valid when it matches with measurements. (Chapter 3)
3. The measured noise is always higher than the expected noise, especially when you are using a superconducting quantum interference device (SQUID). (Chapter 4)
4. Crosstalk is annoying, but you should be able to see it very well before you can decrease it. (Chapter 5)
5. Building a frequency division multiplexing (FDM) system for space applications is similar with solving a math problem: You will find more questions after you answered one, but hopefully you could solve it. (Chapter 6)
6. “Detector fast and slow” is like “Thinking fast and slow”. Sometimes fast is better, sometimes slow. (Chapter 7)
7. The output of scientific work does not always increase with long working time, it looks like reversed 'Allan Variance'.
8. Noise on the detector side is noisier than the noise on the source side.
9. A signal could become a noise, if it is not your target.
10. Often the problem itself is not problematic, but ignoring it is.
11. A small science community does not necessarily mean unprofessional, it could be too advanced to become larger.
12. One difference between a scientist and a politician is that when proved to be wrong, the former might prefer to admit it.