The inverse Faraday challenge

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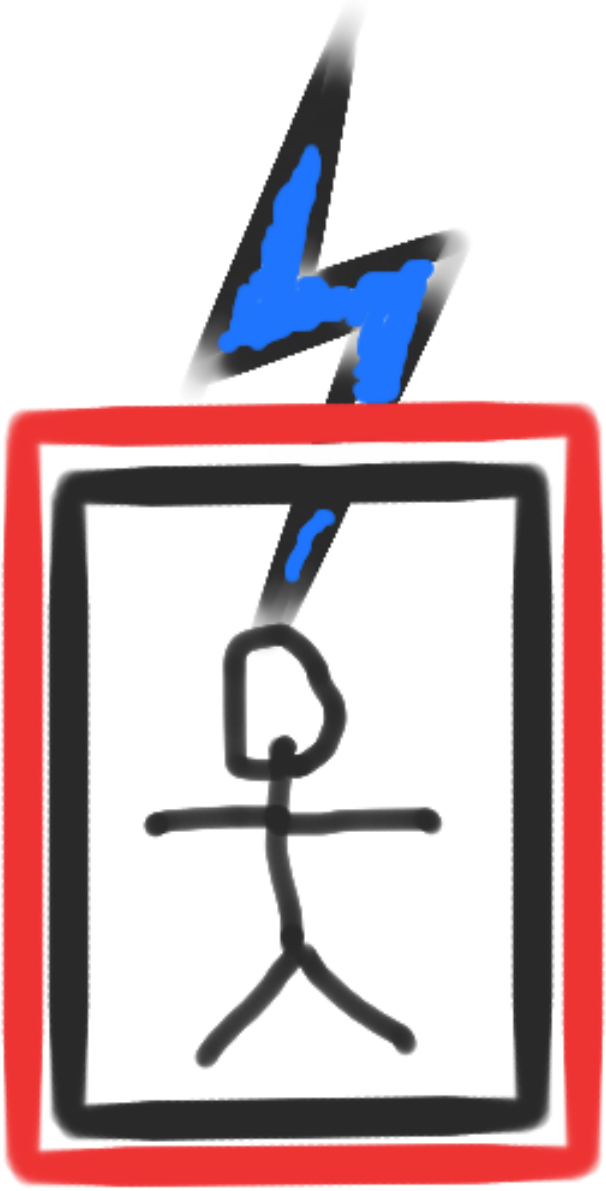

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Hard proof: Messy calculations using laws of electromagnetism.

Easy proof: This is a special case of the "holographic principle".

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Use sensors to extract EM data from chip. Compute secret key.

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Challenge:
Surround Faraday cage with an **inverse Faraday cage** that rebuilds the original EM data.
Sensors work again.

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inverse Faraday cage from

- many EM sensors;
- the messy calculations;
- many EM generators.

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Maybe harder, maybe impossible:
Build inverse Faraday cage as a
simple physical device.

Technical note added to slides after the talk: My understanding of the primary Faraday effect is that waves inside the Faraday cage are converted into movements of electrons on the cage, creating magnetic fields outside the cage, which EM sensors outside the cage should be able to see. For grounded Faraday cages it should also be helpful to tap the ground. Electromagnetic waves can also be converted into other forms of information, so using other types of sensors might also be helpful.