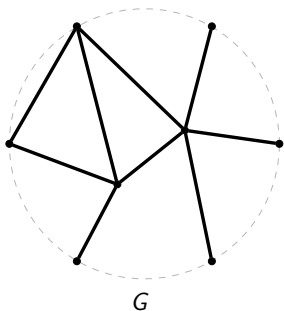


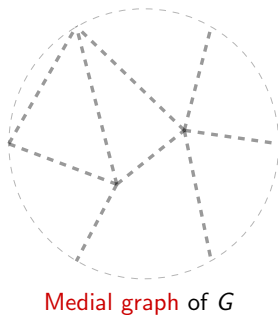
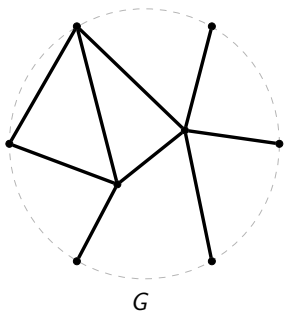
Boundary stratification

Planar Ising network \rightarrow medial graph \rightarrow matching on $[2n]$.



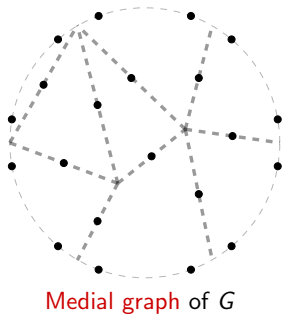
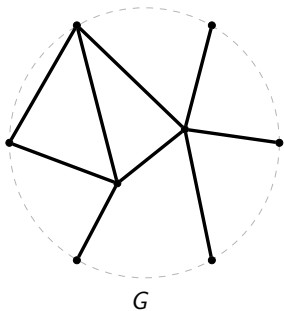
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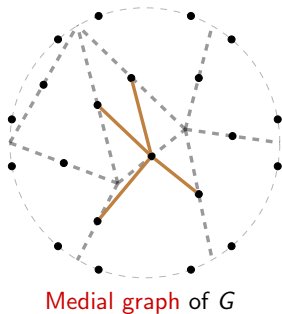
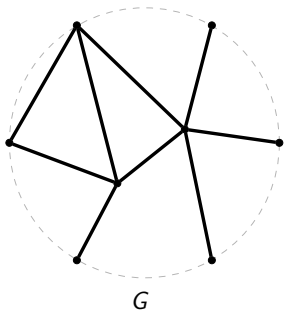
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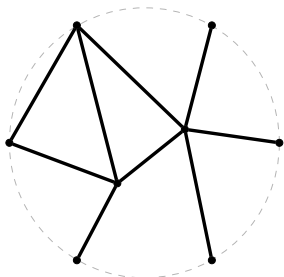
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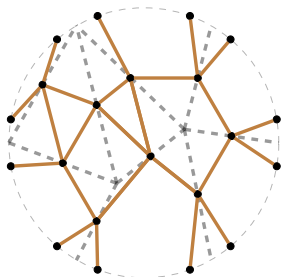


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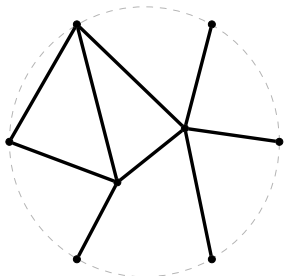
G



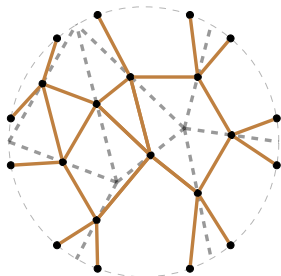
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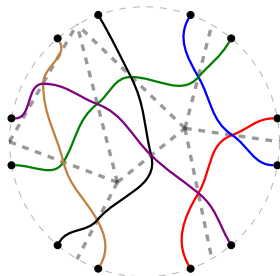
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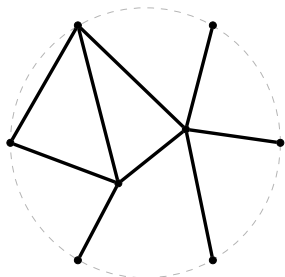
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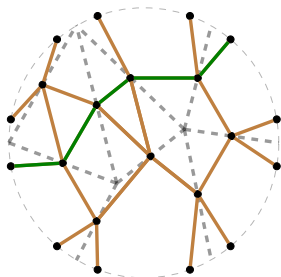
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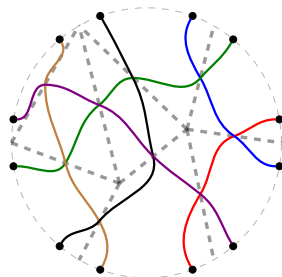
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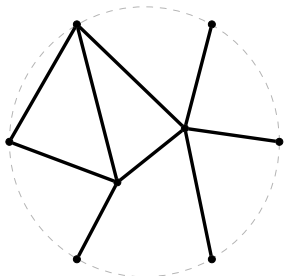
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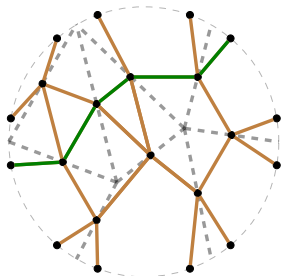
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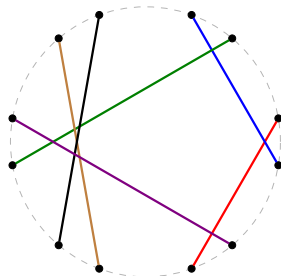
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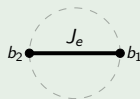
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Example ($n = 2$)



$$\bar{\mathcal{X}}_2 = \left\{ \left(\begin{array}{c|c} 1 & m \\ m & 1 \end{array} \right) \middle| m \in [0, 1] \right\}.$$

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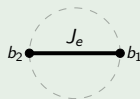
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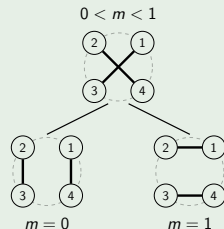
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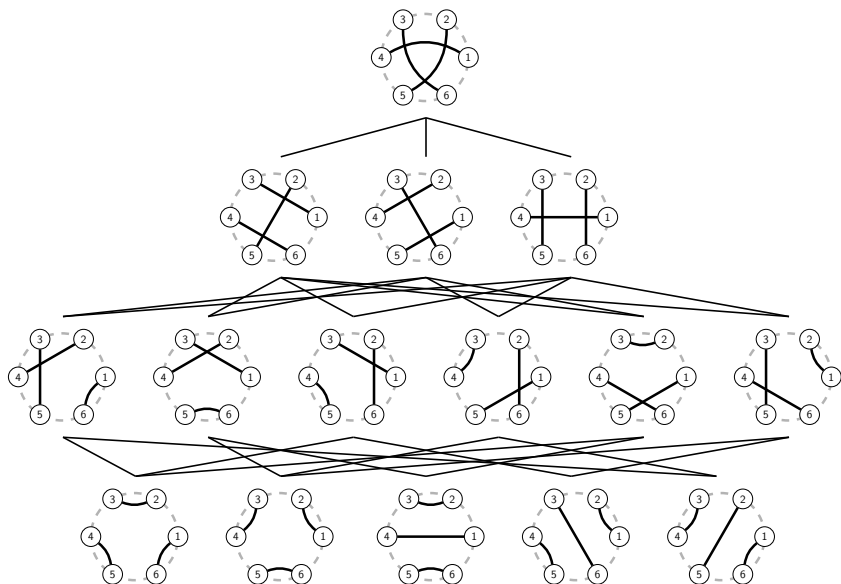
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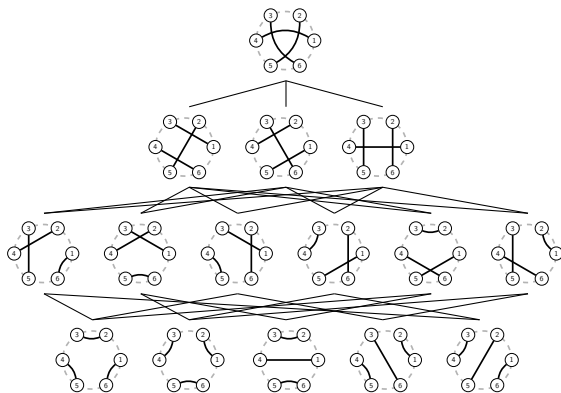
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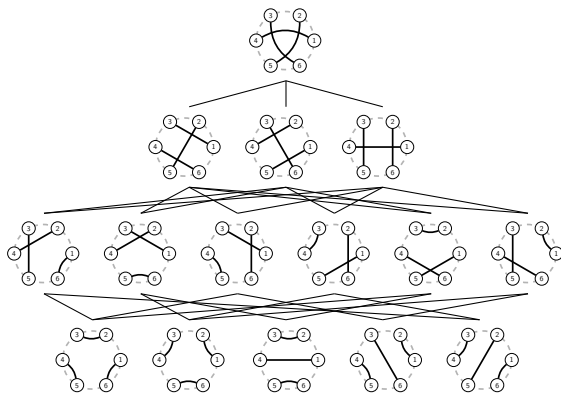
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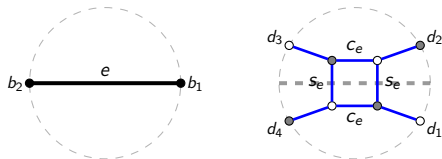
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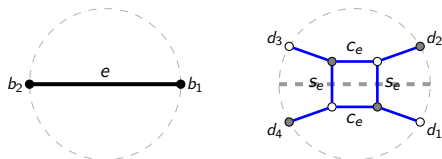
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Plabic graphs

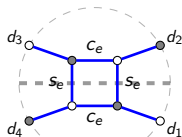
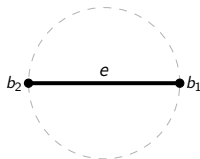


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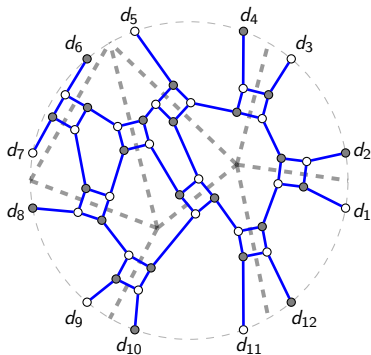
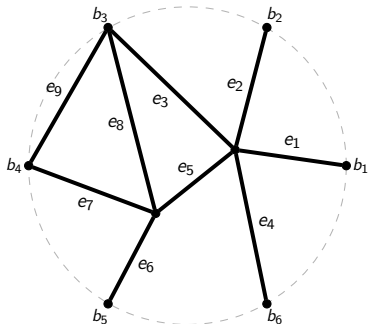


Here $s_e := \operatorname{sech}(2J_e)$, $c_e := \tanh(2J_e)$ so that $s_e^2 + c_e^2 = 1$.

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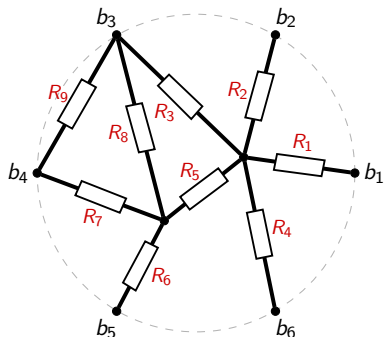


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Electrical networks

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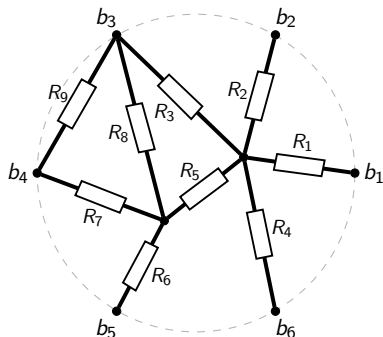


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Definition

Electrical response matrix $\Lambda(G, R) : \mathbb{R}^n \rightarrow \mathbb{R}^n$, sending voltages to currents.



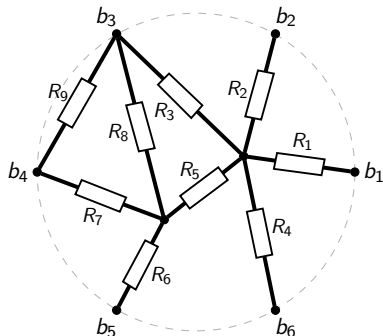
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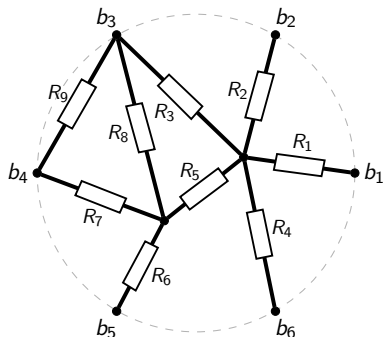
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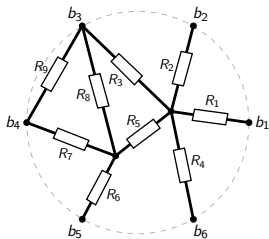
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Ising networks vs. Electrical networks

$\overline{\mathcal{X}}_n$: space of $n \times n$ boundary correlation matrices of planar Ising networks

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Problem

Construct a stratification-preserving homeomorphism between $\overline{\mathcal{X}}_n$ and \overline{E}_n .

- Show that $\overline{\mathcal{X}}_n$ is a regular CW complex.

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- What is the “scaling limit” of $X_0 \in \text{OG}_{\geq 0}(n, 2n)$ as $n \rightarrow \infty$? In what sense is it “conformally invariant” or “universal”?