GENUS BOUNDS IN $\mathbb{CP}^2 - B^4$

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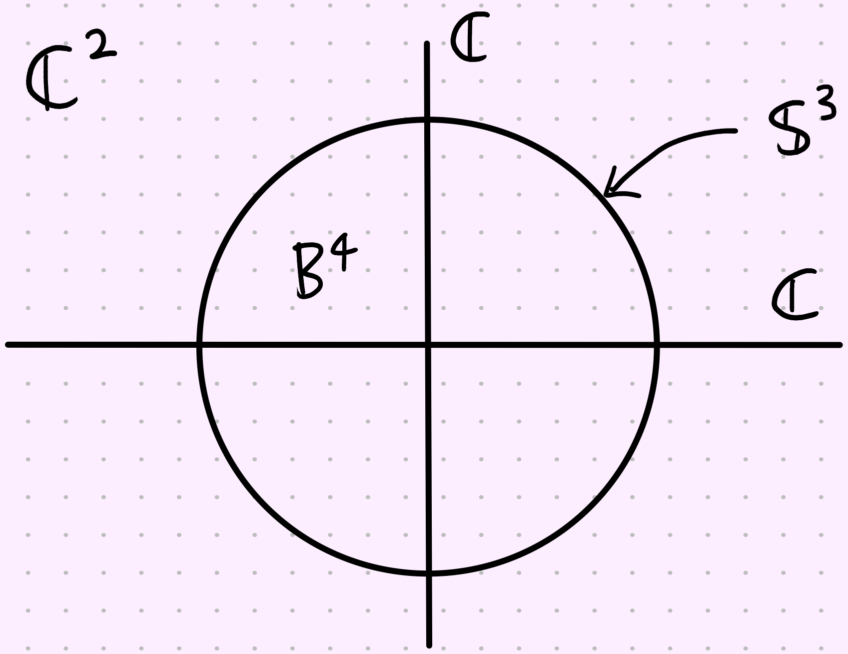
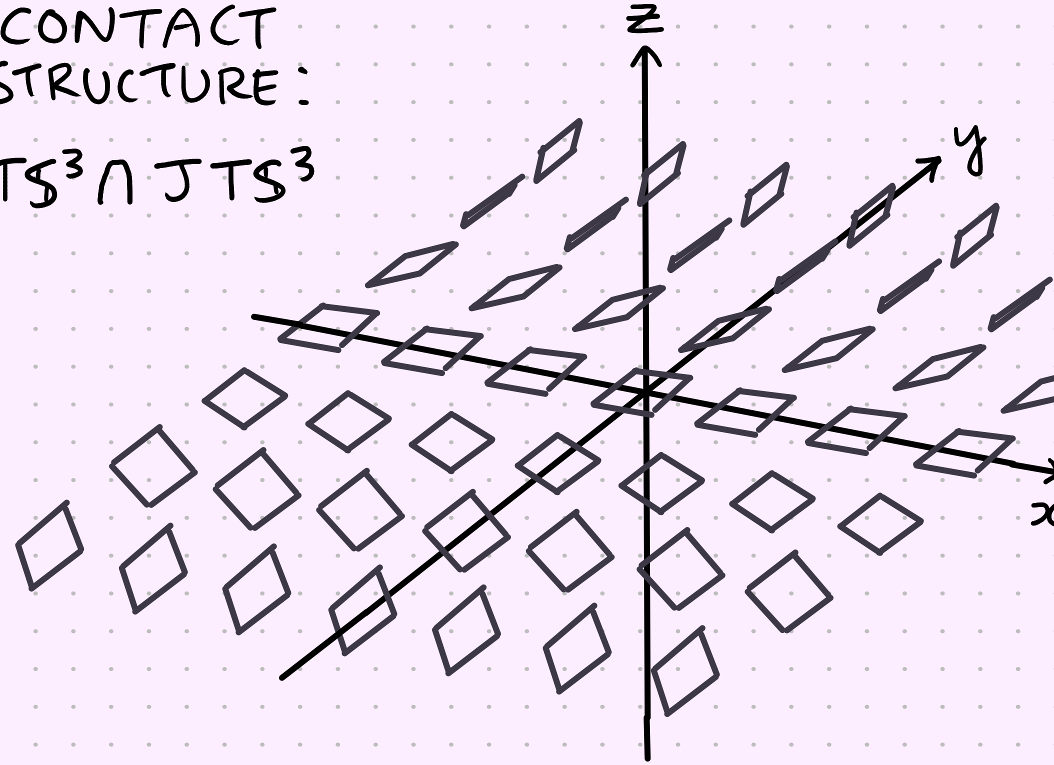
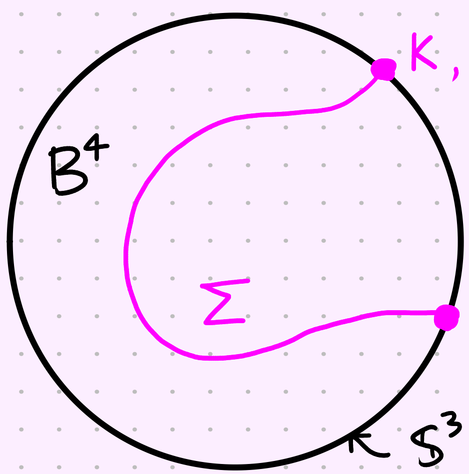
THE SLICE-BENNEQUIN INEQUALITY



CONTACT STRUCTURE:

$TS^3 \cap JTS^3$





TRANSVERSE KNOT

RUDOLPH

$$2g(\Sigma) - 1 = -\chi(\Sigma) \geq sl(K)$$

$lk(K, K')$

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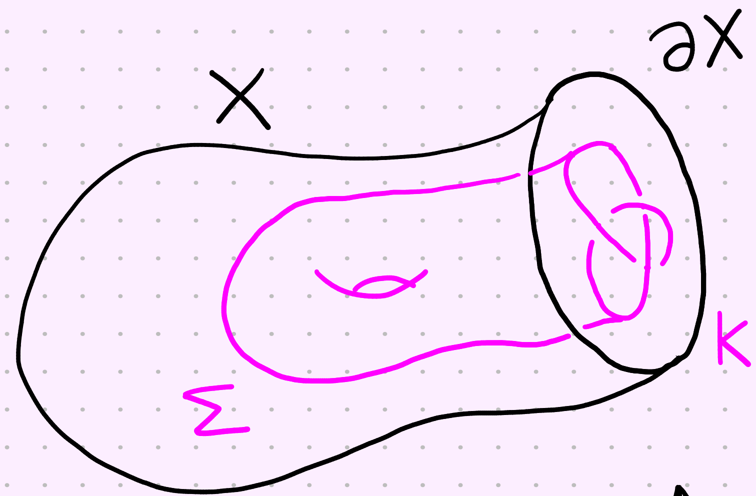
THE INEQUALITY, MORE GENERALLY



CONVEXITY
CONDITION ON
THE BOUNDARY?

LISCA - MATIĆ

- X STEIN
- $K \subseteq \partial X$ TRANSVERSE

$$\Rightarrow \quad -\chi(\Sigma) \geq sl(K, \Sigma)$$

MROWKA - ROLLIN

- $\mathfrak{s} \in Spin^c(X, \partial X)$, $SW(\mathfrak{s}) \neq 0$
- $K \subseteq \partial X$ TRANSVERSE

$$\Rightarrow \quad -\chi(\Sigma) \geq sl(K, \Sigma, \mathfrak{s})$$

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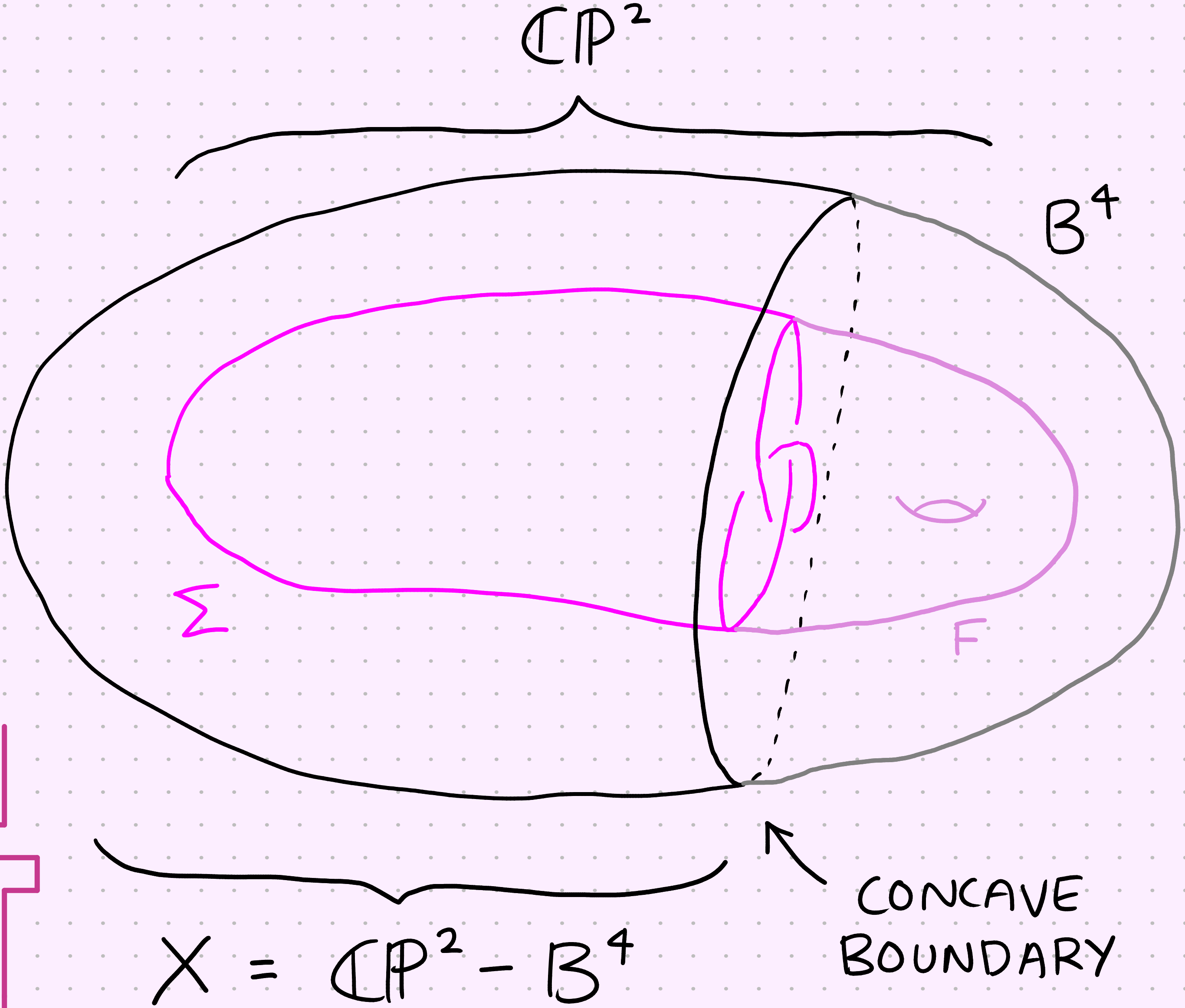
A SURFACE IN $\mathbb{CP}^2 - B^4$



SPECIFICALLY:

- $\Sigma \subseteq \mathbb{CP}^2 - B^4$ DISK
- $\partial\Sigma \subseteq S^3$ RHT
- $[\Sigma] = 0 \in H_2(X; S^3)$

- $-\chi(\Sigma) = -1$
- $sl(K, \Sigma) = 1$

SLICE-BENNEQUIN FAILS!

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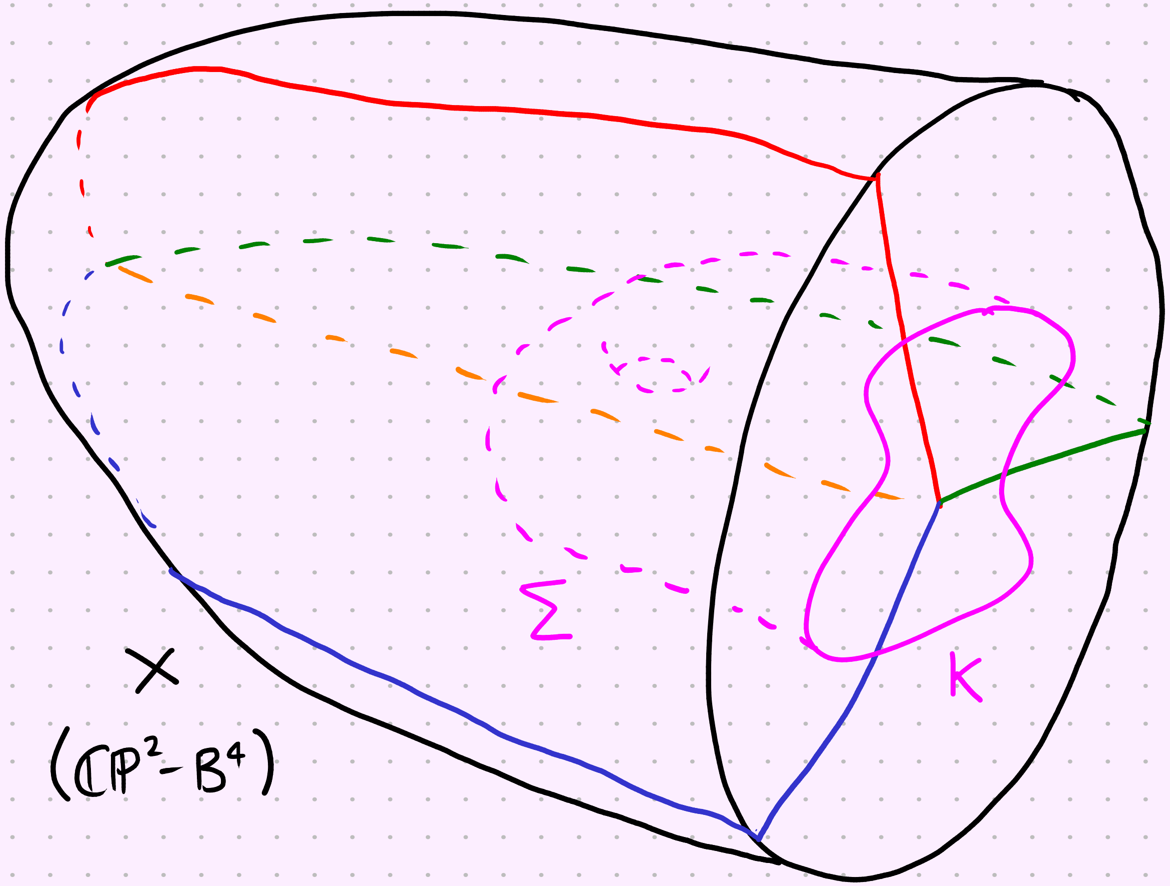
WHAT CAN WE DO?



LAMBERT-COLE

- X, WEINSTEIN TRISECTED
- Σ, HOMOTOPIC TRANSVERSE BRIDGE POSITION
- K, TRANSVERSE

$\Rightarrow \; -\chi(\Sigma) \geq sl(K, \Sigma)$

WHEN ARE THE ABOVE PREMISES SATISFIED?

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THANK YOU FOR YOUR ATTENTION!

ANY QUESTIONS?

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