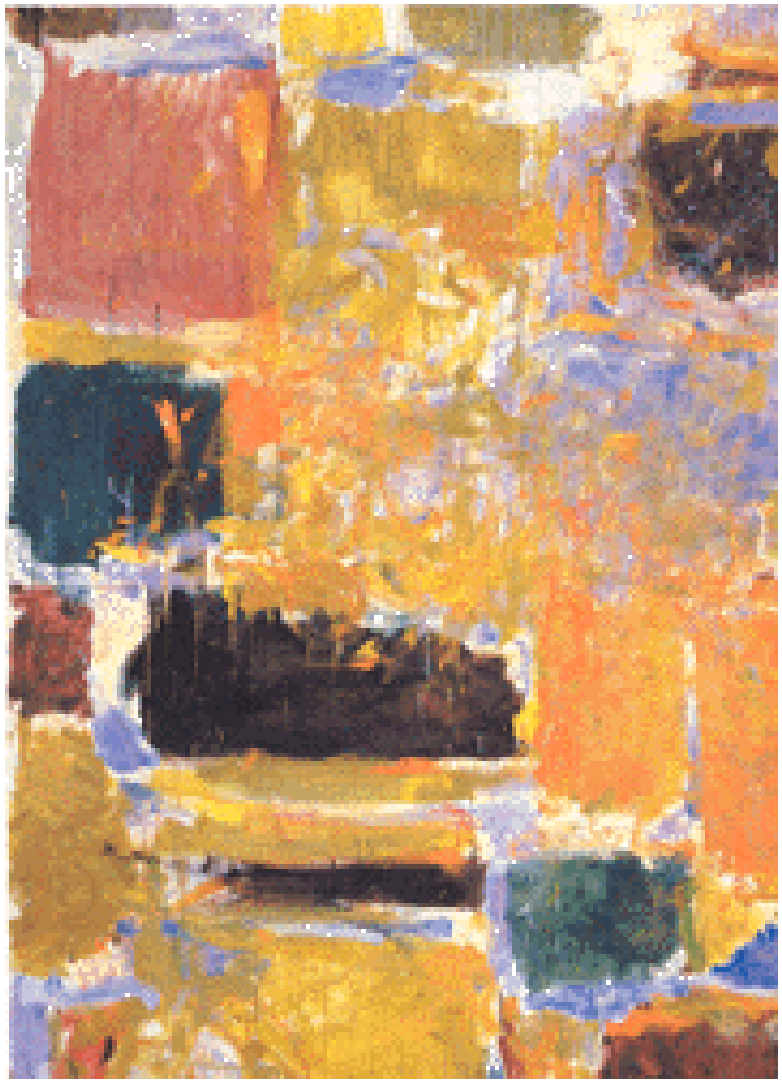
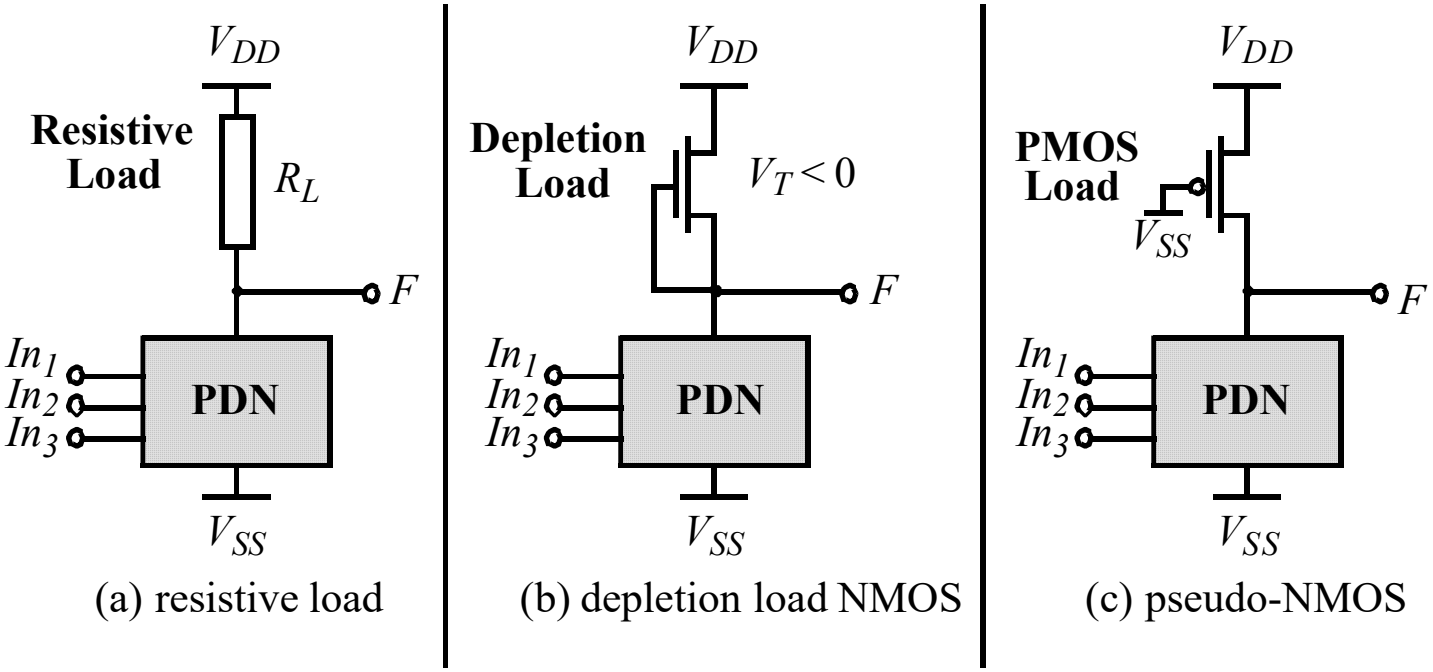


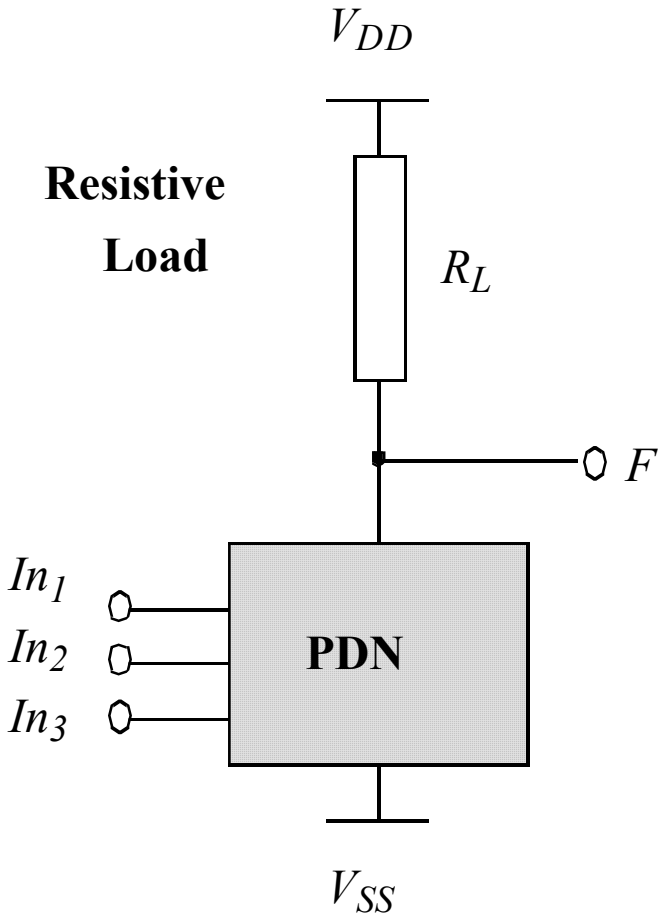
Ratioed Logic

Ratioed Logic



Goal: to reduce the number of devices over complementary CMOS

Ratioed Logic



- N transistors + Load
- $V_{OH} = V_{DD}$
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- Static power consumption
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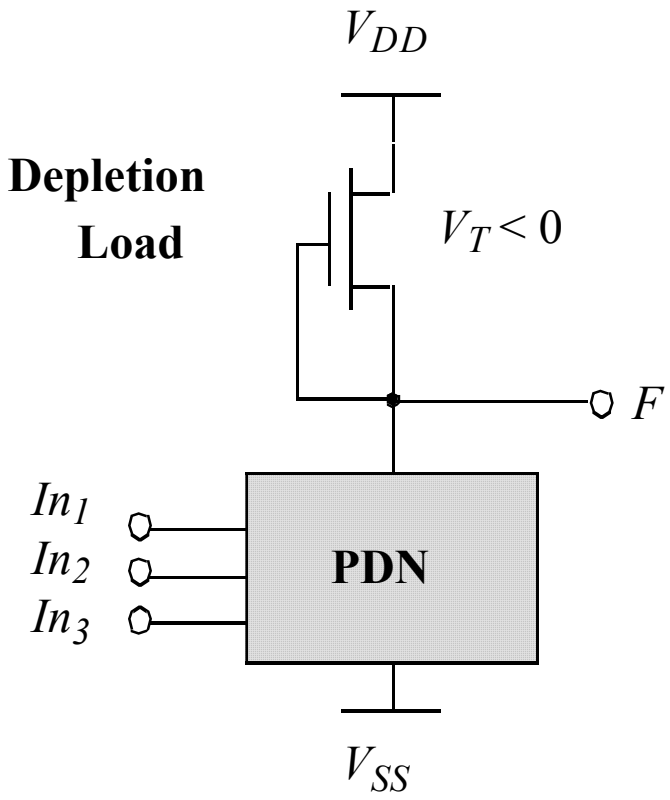
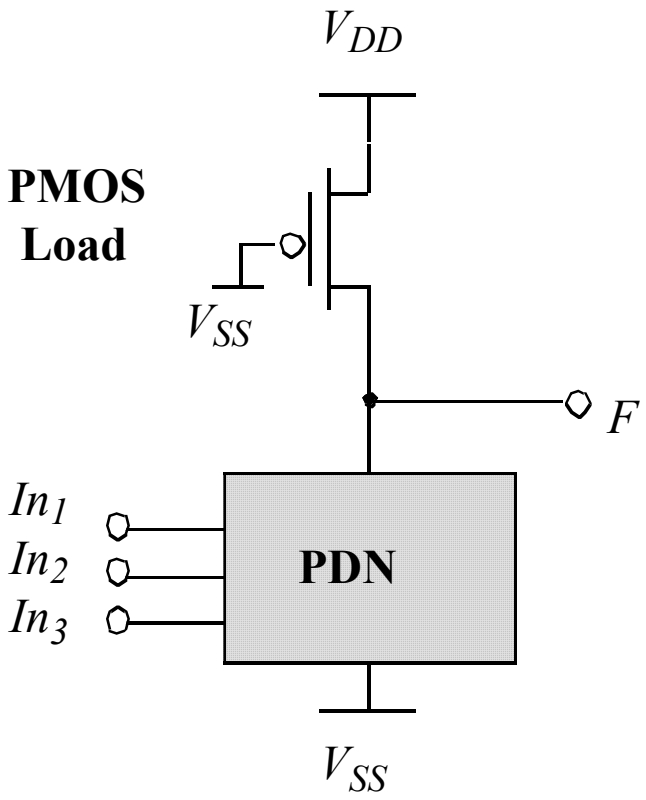
Active Loads



depletion load NMOS



pseudo-NMOS

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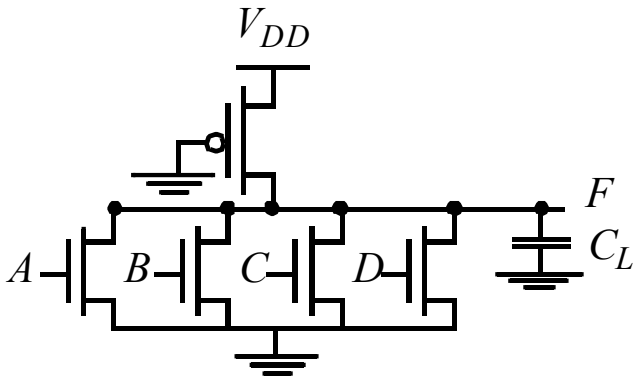

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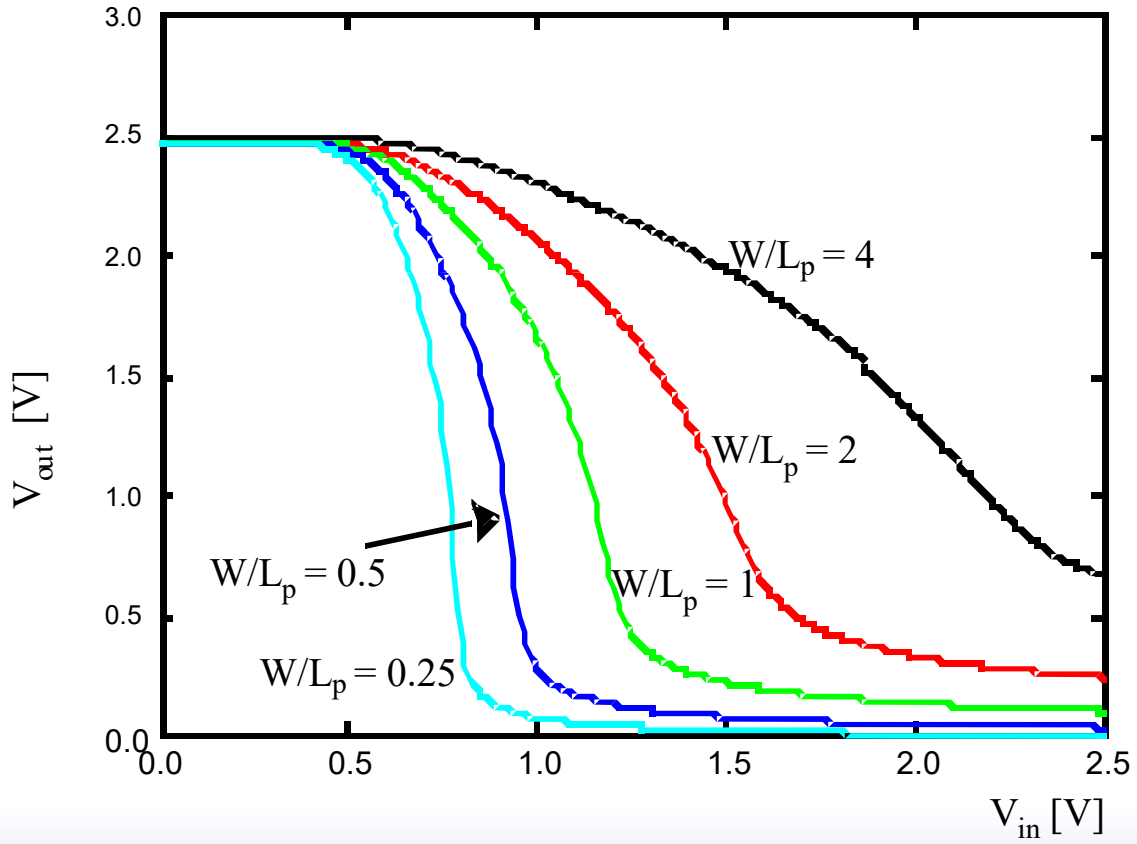
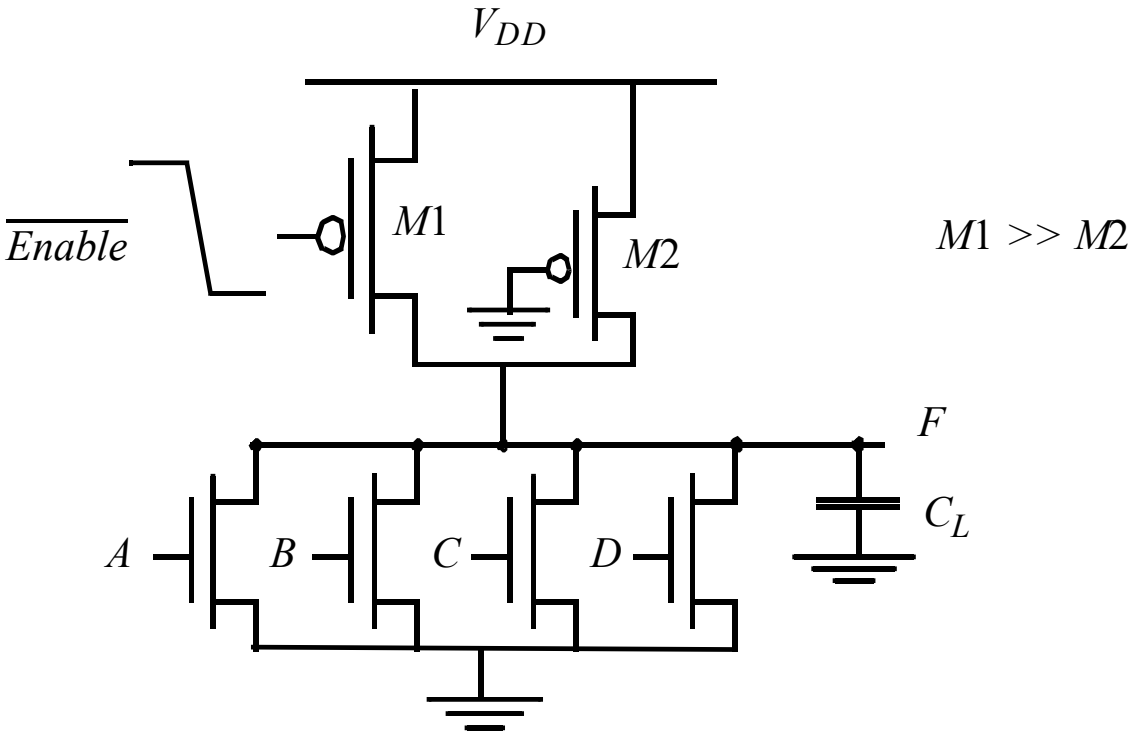
SMALLER AREA & LOAD <u>BUT</u> STATIC POWER DISSIPATION!!!

Pseudo-NMOS VTC

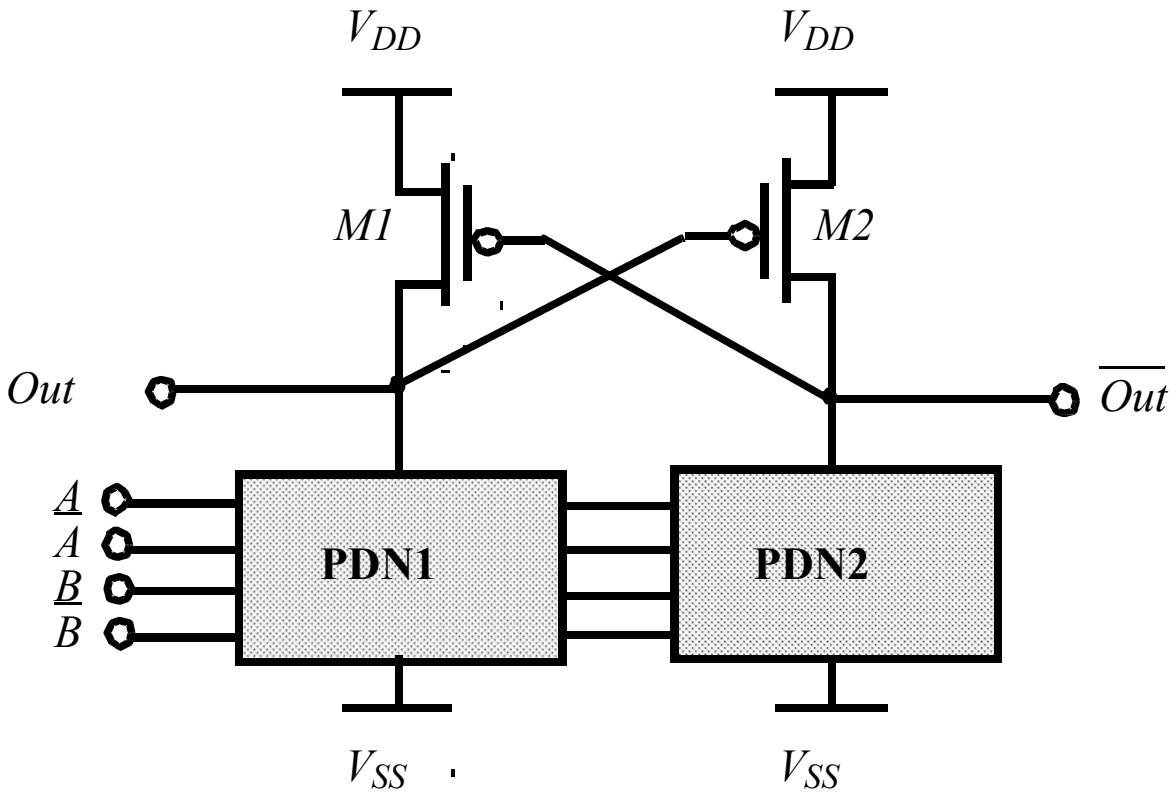


Improved Loads



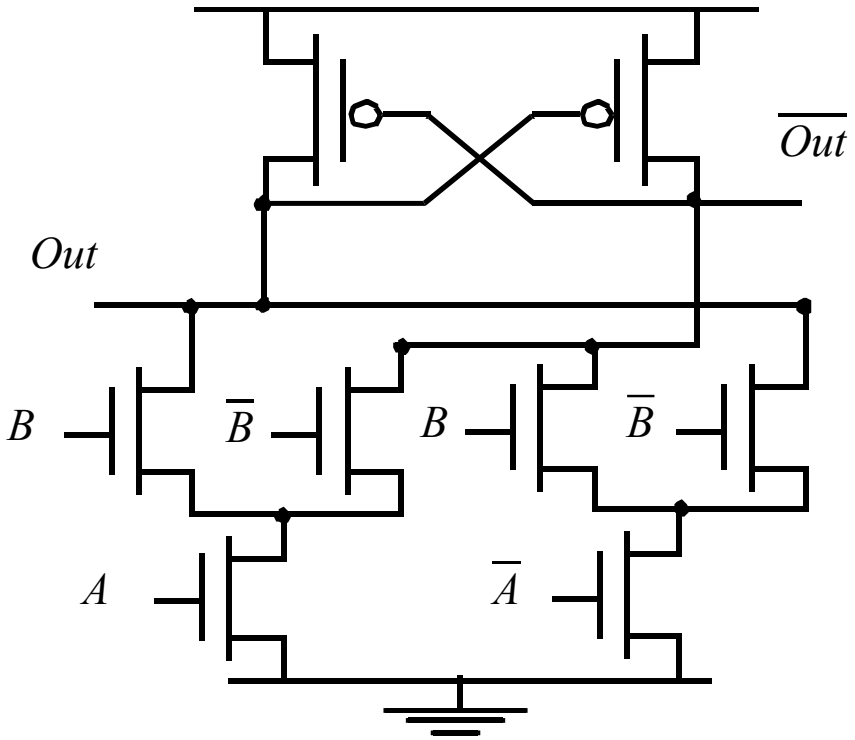
Adaptive Load

Improved Loads (2)



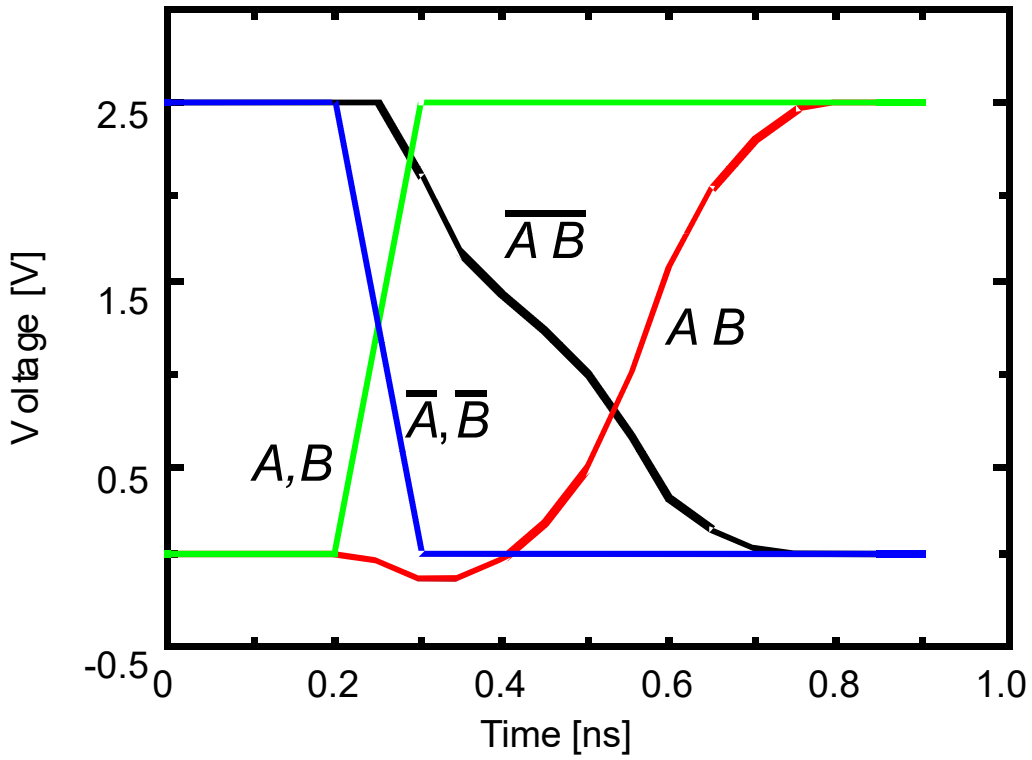
Differential Cascode Voltage Switch Logic (DCVSL)

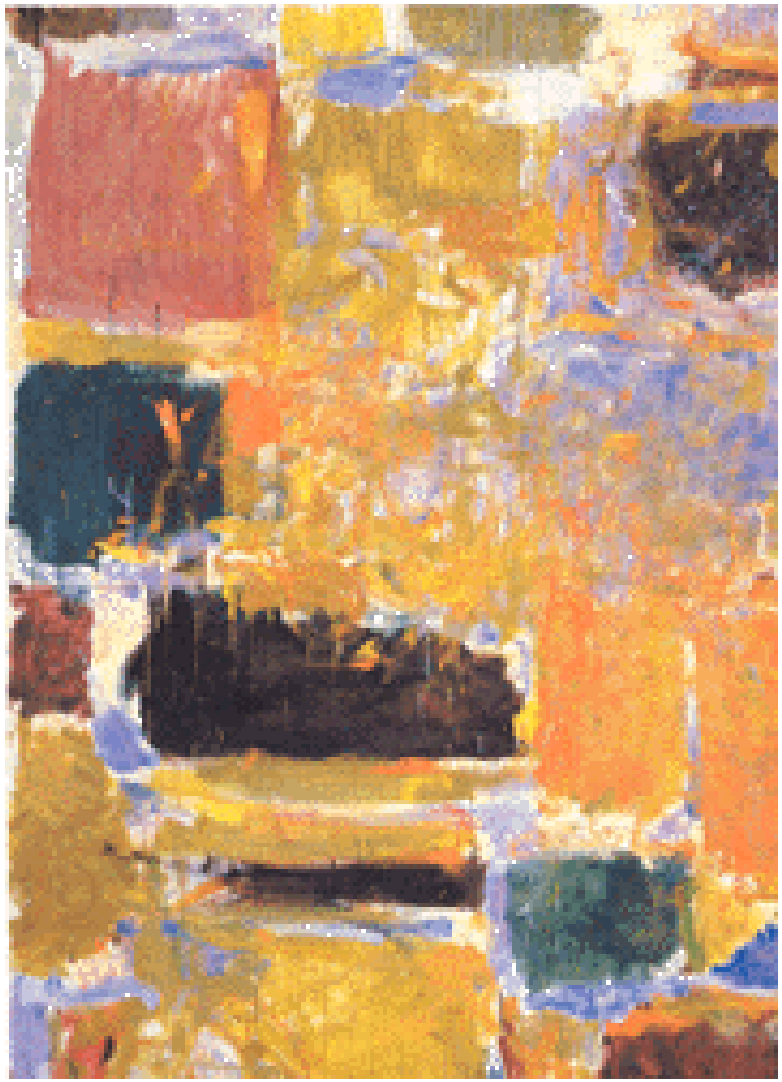
DCVSL Example



XOR-NXOR gate

DCVSL Transient Response





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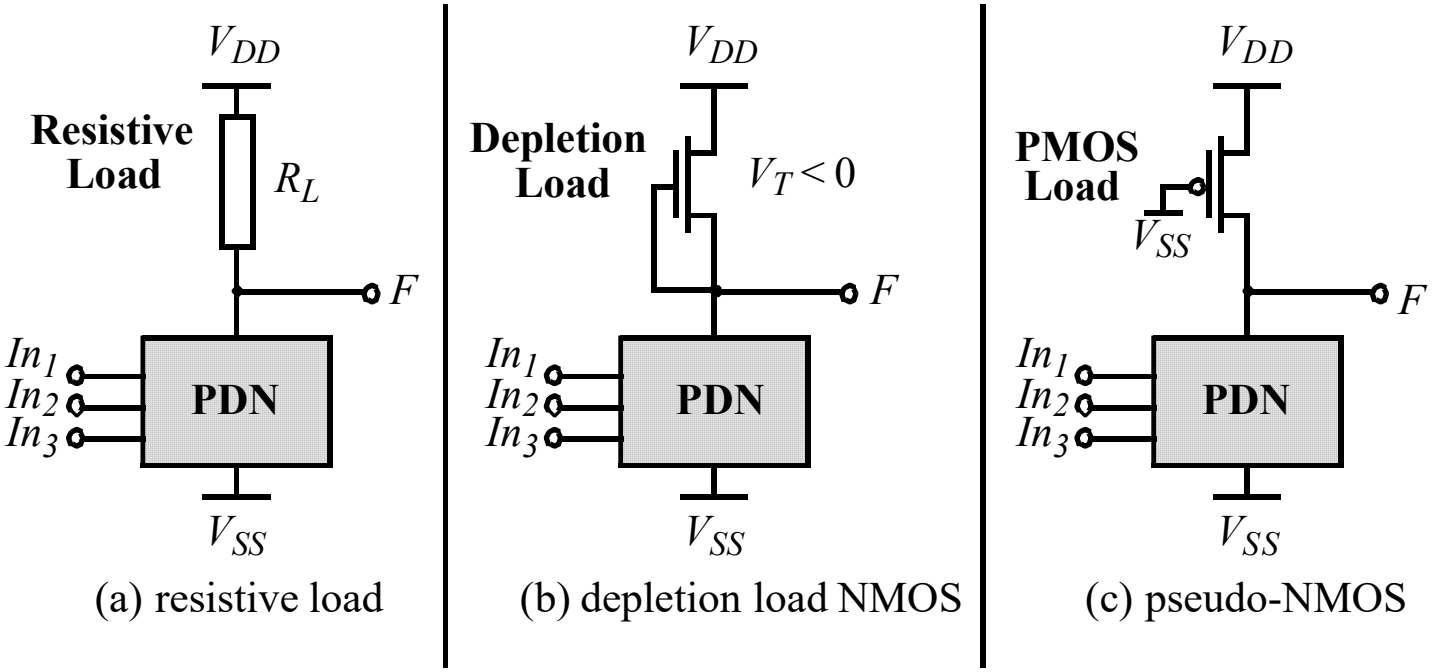

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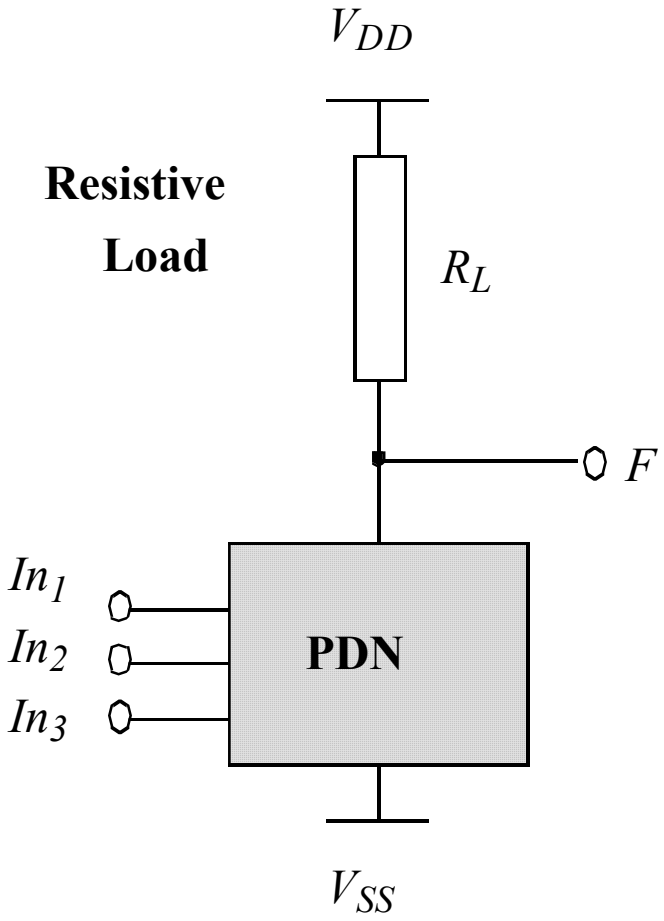

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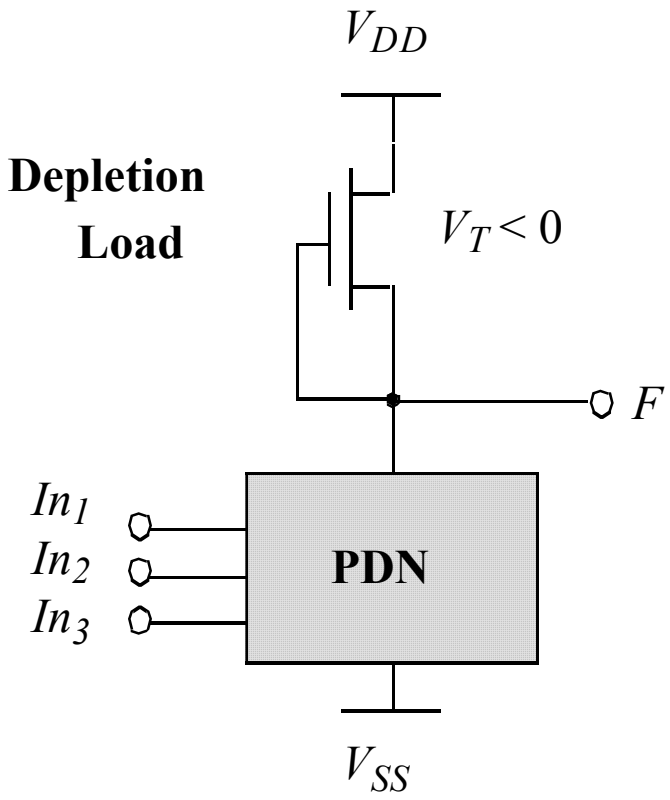
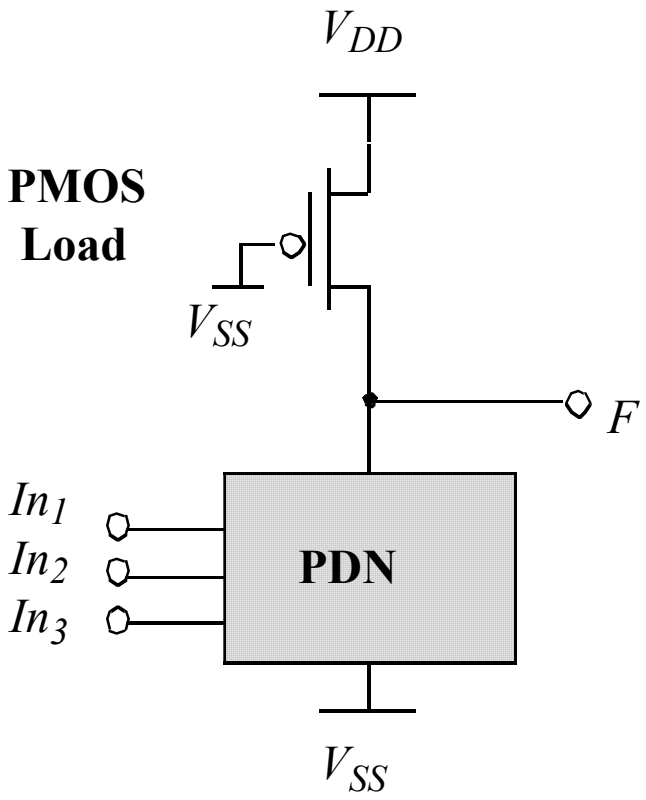


depletion load NMOS



pseudo-NMOS

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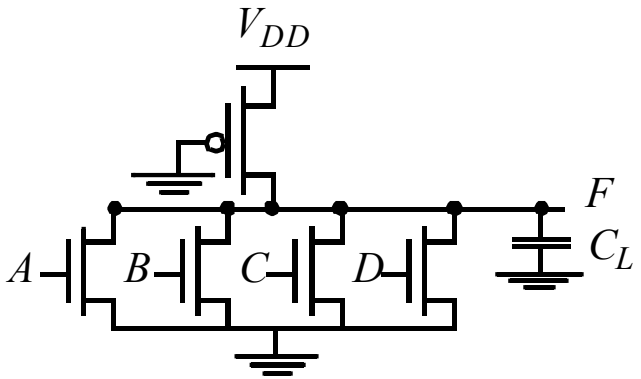

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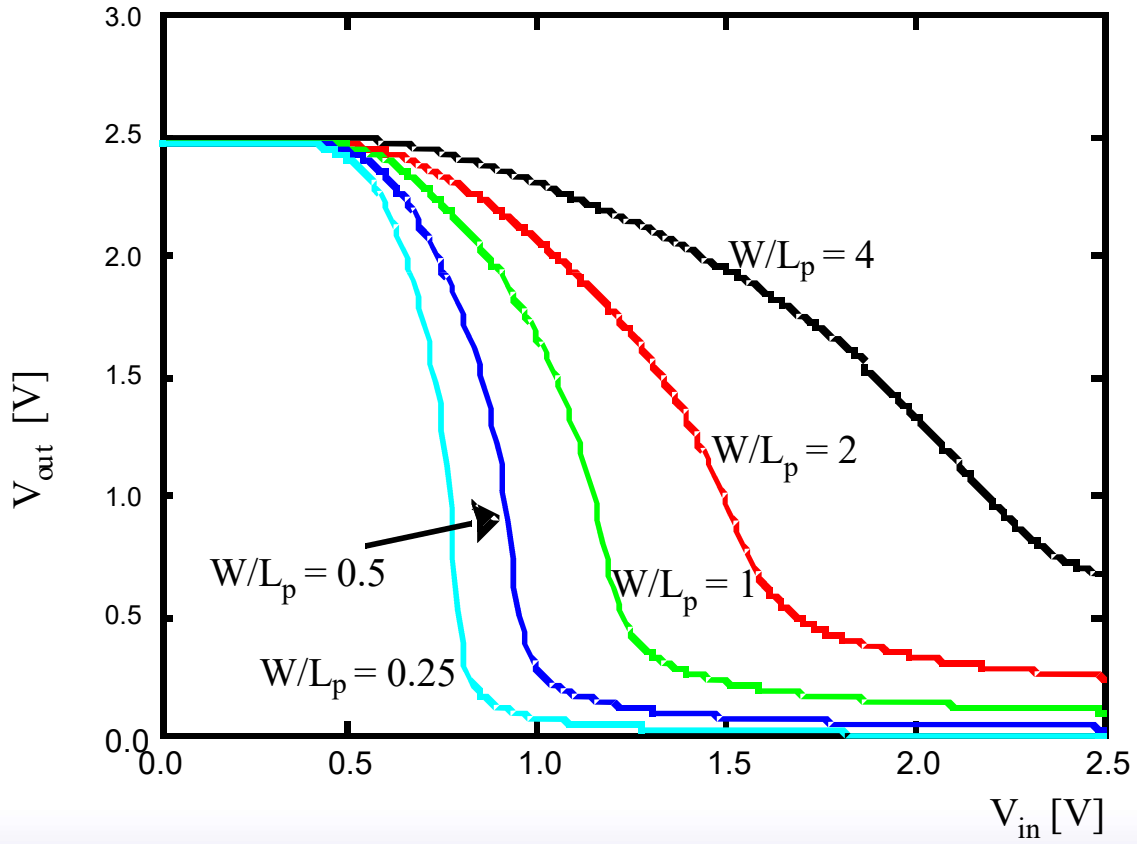
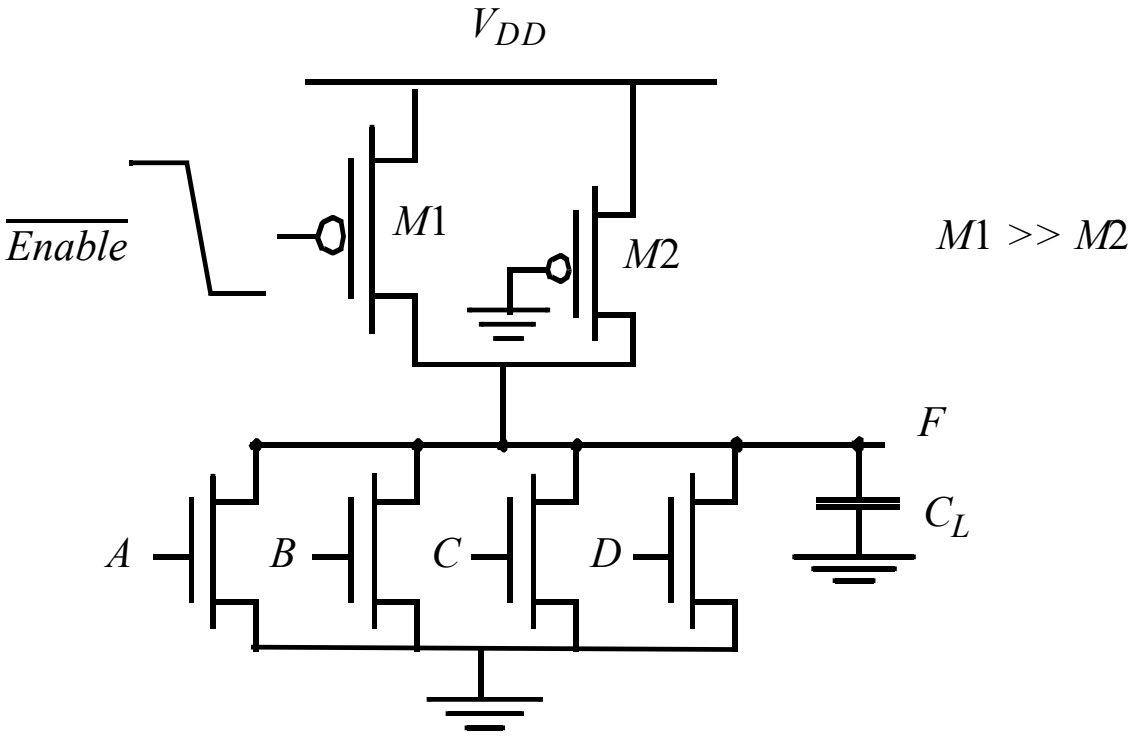
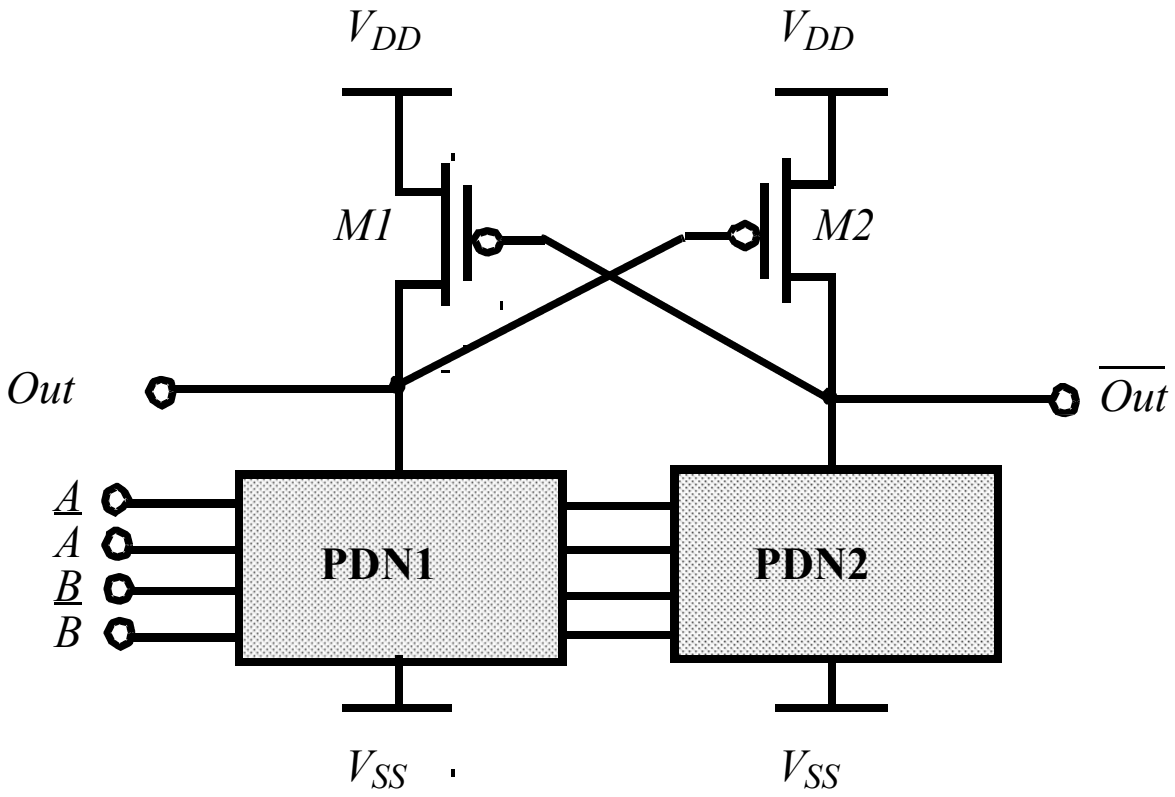


Improved Loads



Adaptive Load

Improved Loads (2)



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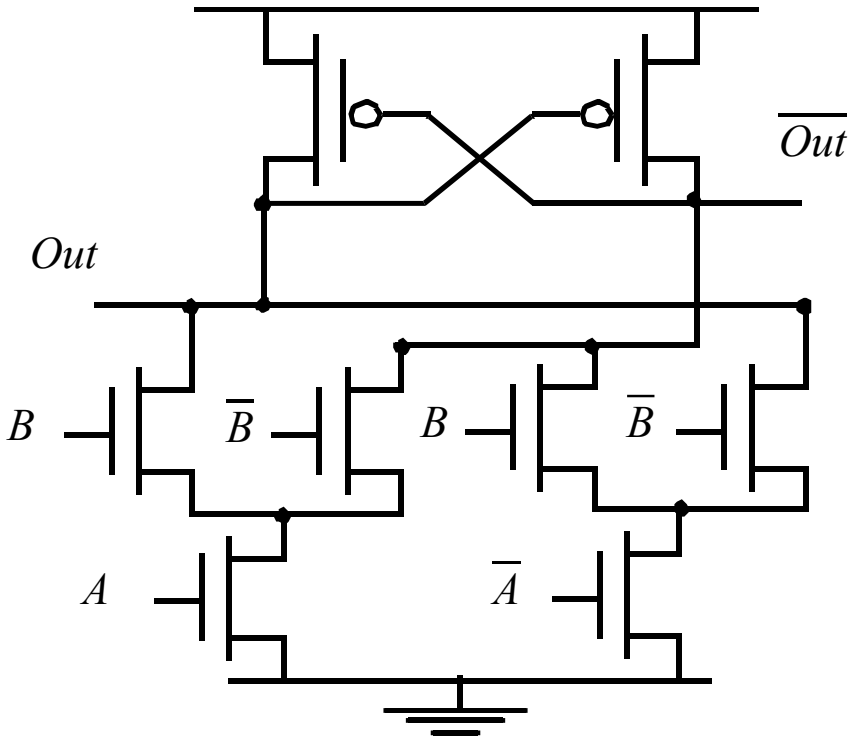

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