Hierarchical spatial prediction in mouse visual cortex with and without early visual experience ☀/●

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INTRODUCTION

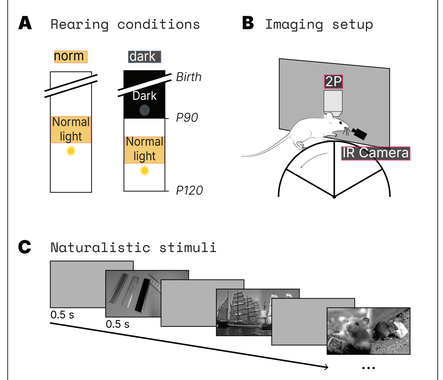
- The visual brain encodes not only **what we see**, but also **how predictable** that input is given the spatial context
- Specifically, beyond classical feature tuning, responses in V1 are modulated by unpredictability, particularly at higher representational levels[1, 2]
- It remains unclear whether this **high-level** unpredictability tuning is acquired through early visual experience

Research question:

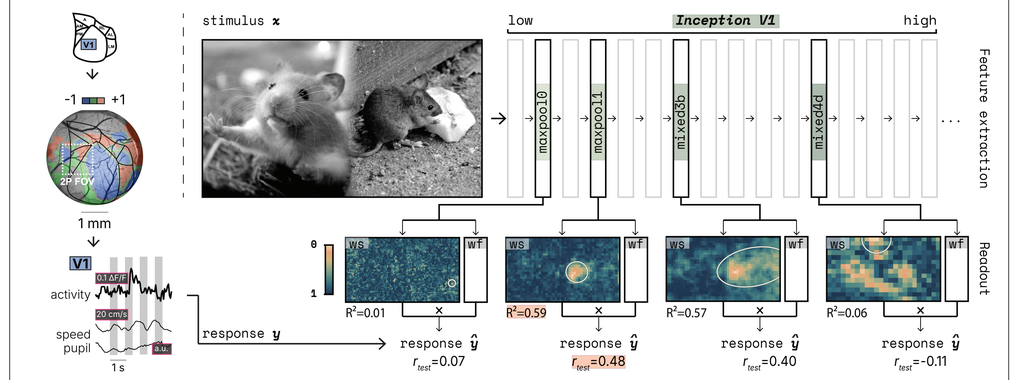
Does visual deprivation during early development impair unpredictability tuning in early visual cortex?

METHODS

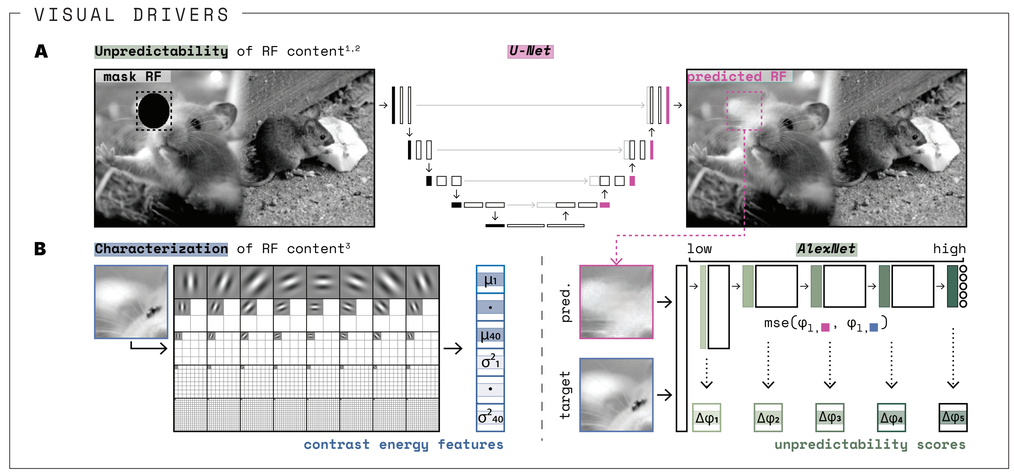
2P-IMAGING



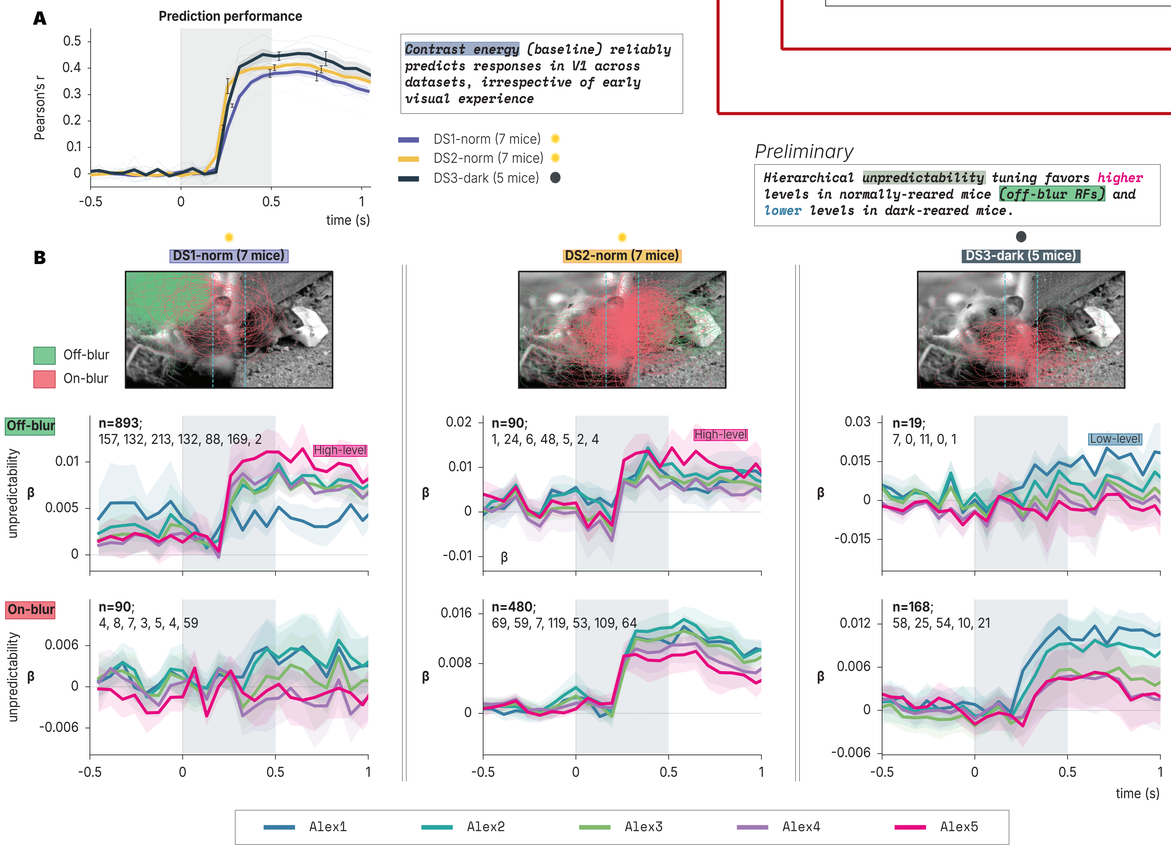
RF ESTIMATION[4]



VISUAL DRIVERS



RESULTS



CONCLUSION

- **Replication:** V1 calcium responses are predominantly modulated by **high-level** unpredictability (DS1), consistent with previous findings.
- **Discrepancy:** tuning profiles differ across DS1 and DS2, potentially due to RF overlap with the artificial blur boundary.
- **Rearing differences:** off-blur RFs show predominantly **high-level** tuning in normally-reared mice and **low-level** tuning in dark-reared mice.

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