

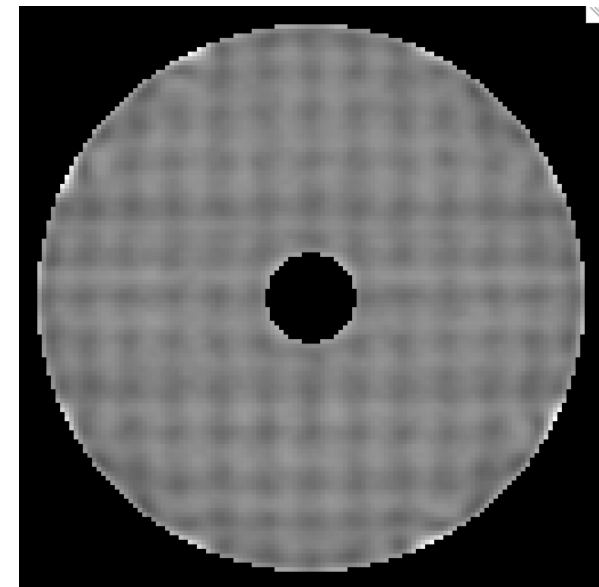
ExAOC Woofer DM requirements

NRC · CNRC

	Full pupil (μ)	Reduced pupil (μ)
No Woofer (except TTM)	1.30	1.11
177 actuator PMN DM (Altair) woofer	0.29	0.19
104 actuator bimorph (PUEO-NUI) woofer	0.25	0.25
36 actuator bimorph woofer	0.36	0.33
19 actuator bimorph (PUEO) woofer	0.49	0.40

Wave-front error left to the MEMs after woofer correction.
Results are **1- standard deviation** for $r_0=15\text{cm}$ @ 0.5μ .
Results scale as $(r_0/0.15)^{(6/5)}$

- Highest stroke required at the edge of the pupil



- Altair's DM has 4μ stroke mechanical (i.e. 8μ wave-front)
- Projection on a M-actuator woofer requires $1 \text{ M} \times \text{N}$ & $1 \text{ N} \times \text{M}$ VMMs
 - Can the woofer operate at a slower speed to alleviate computation load ?

ExAOC block diagram: first cut

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