V(u) = 0 as a probe of stellar atmospheres

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Premise:

The spatial frequency *u* where Re(V) = 0 can vary with λ .





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We know that $\theta_{UD} = \theta_{UD}(\lambda)$; for example:





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 $\theta_{\rm UD}$ (800 nm) / $\theta_{\rm UD}$ (550 nm) pprox 2%



Three questions:

- 1) How can you measure θ_{UD} precisely?
- 2) How can you measure $\theta_{UD}(\lambda)$ across λ ?
- 3) Is this interesting?



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- 1) How can you measure *u*, precisely?
- 2) How can you measure $|u|_0(\lambda)$ across λ ?
- 3) Is this interesting?





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Three questions:

- ✓ 1) How can you measure |u|₀ precisely?
- 2) How can you measure $|u|_0(\lambda)$ across λ ?
 - 3) Is this interesting?





v Ophiuchi (G9 III)

Kurucz model atmosphere

Plane parallel $T_{\rm eff} = 4750$ K $\log g = 2.5$ [Fe/H] = 0.1



Spherical $T_{\text{eff}} = 4800 \text{ K}$ $\log g = 2.5$ [Fe/H] = 0.1 $M = 2.5 M_{\text{sol}}$





Compare with NPOI zero-crossing measurements









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