Determining the size of Coronal Bright Points using cross-correlation methods and data from AIA/*SDO*

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Outline

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What is a Coronal Bright Point (CBP)?

General

- Aka. X-ray bright point
- Ubiquitous across solar disk
- Dominate during solar minimum
- Emerging flux vs. cancelling bipoles (opposite polarity magnetic features cancelling)
- Lifetimes: 1 hour - $\sim$ few days
- Size $\sim$ 10-30 arcsec (22 Mm); cores $\sim$4-7 Mm

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Cross-correlation

$$f(t) \star g(t) = f(-t) * g(t)$$

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Properties from the literature

	period	decay time	velocity
kink osc	2-20 m	quickly	—
sausage osc	30 s – 7 m	—	—
acoustic osc	7-31 m	5-30 m	200 km s^{-1}
acoustic waves	140-420 s (2-7 m)	—	35-165 km s^{-1}
fast waves	—	—	$>$150 km s^{-1}
torsional modes	10 m	long	1000 km s^{-1}