



Spin Waves Diffraction from Curvilinear Antennas

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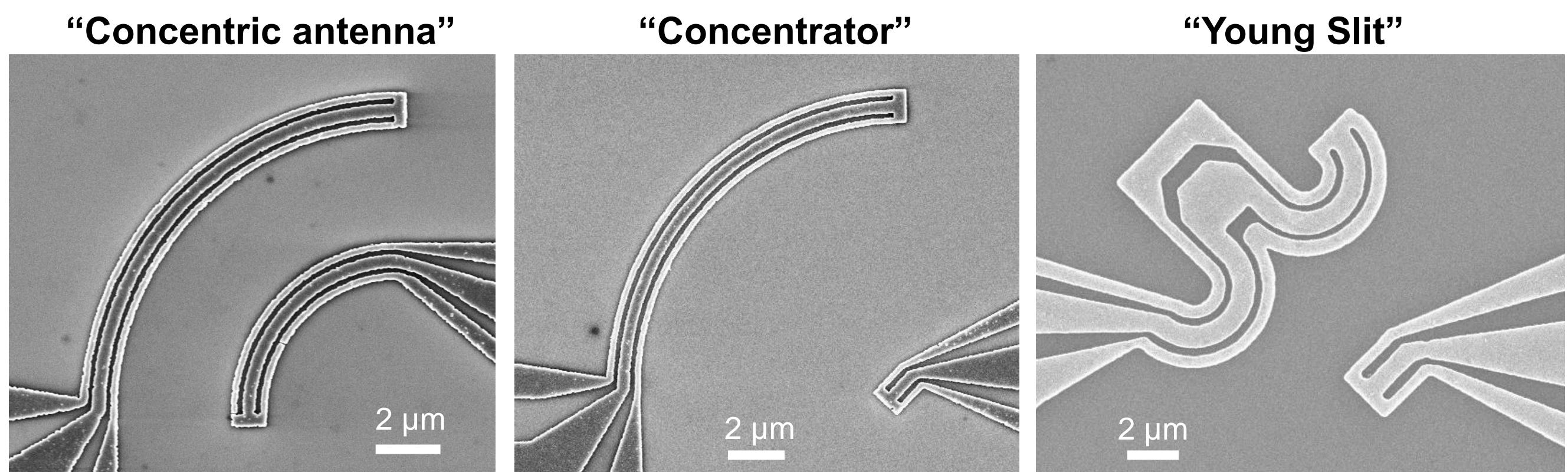
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Spin Waves Diffraction from Curvilinear Antennas

Motivations

- **Shaping spin wave beams in continuous layers**
Design 3 demonstrators of curvilinear microwave antennae
- **Diffraction model for all spin wave modes**
Efficient tool to map the Near-Field Diffraction (NFD) patterns of any shape of spin wave antennas [1]
- **2D discrete mapping with SW spectroscopy [2,3]**



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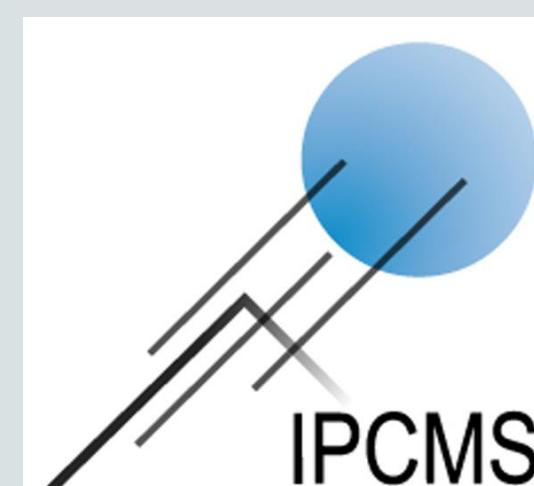


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Fundings



ANR "MagFunc"

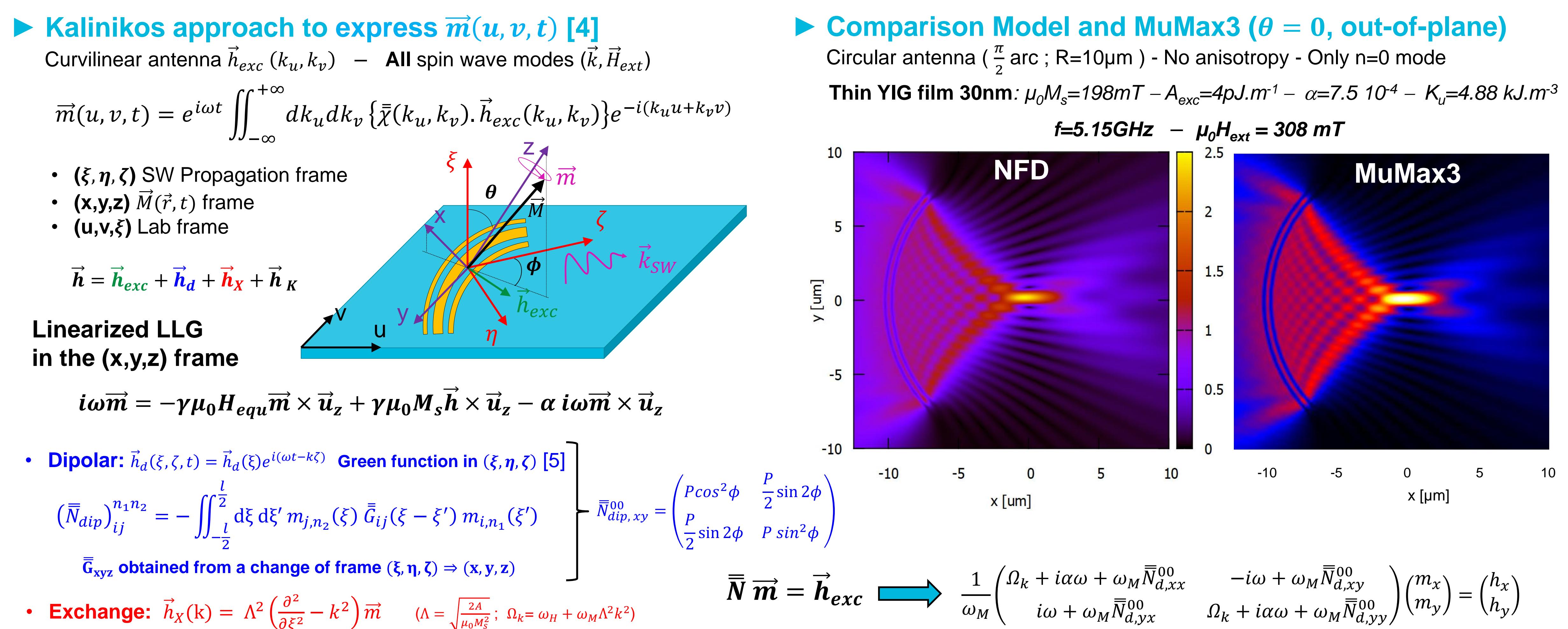


Project "SOSMAG"

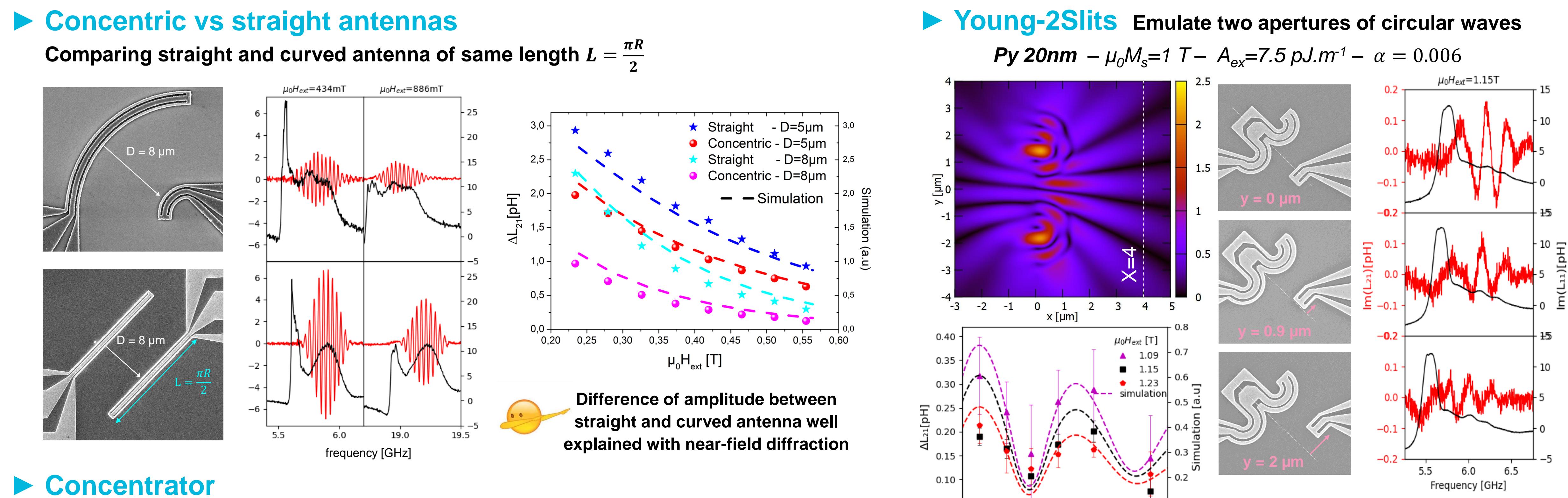
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Near-Field diffraction model for arbitrary shaped antenna



Measuring interference patterns of curvilinear antennas



Conclusions

- Excellent agreement between a NFD model and MuMax3 simulations
- Discrete mapping of SW amplitude with a $\sim 1 \mu\text{m}^2$ resolution
- Experimental demonstration of SW diffraction from curvilinear antennae
- Exploration of multiport spin wave interferometric devices [6,7]