

# Observational evidence of the land cover effect on shallow cumulus clouds over Southern Great Plains

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Cloud Optically Gridded by Stereo (COGS)

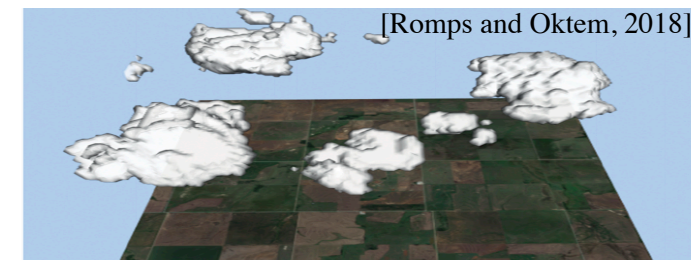
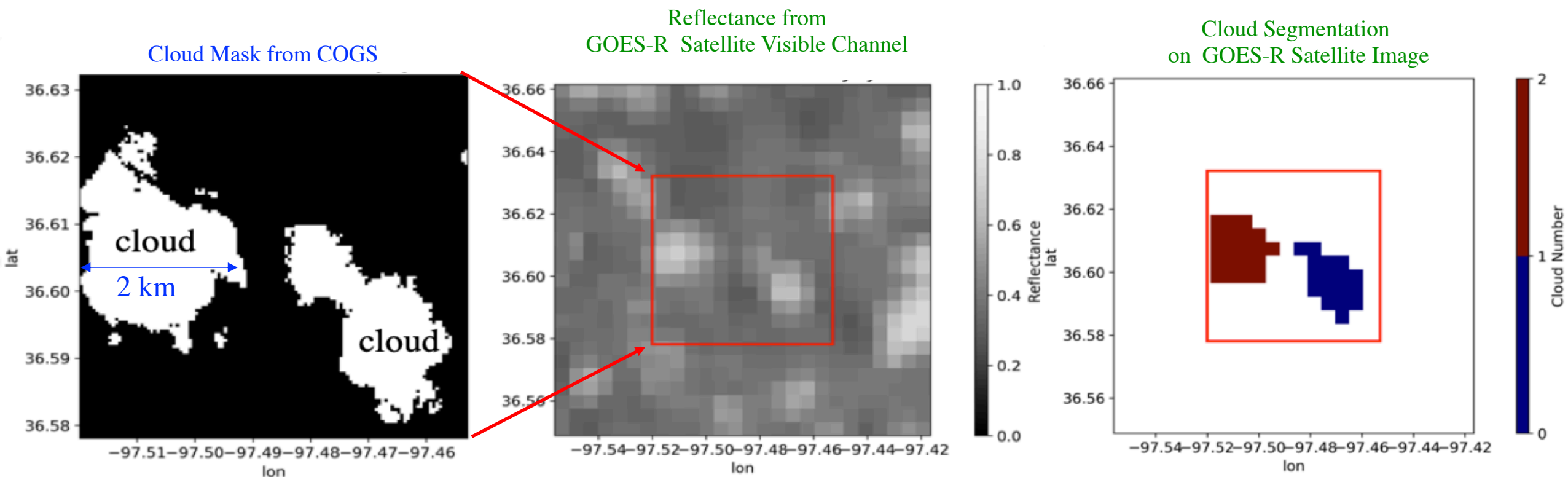
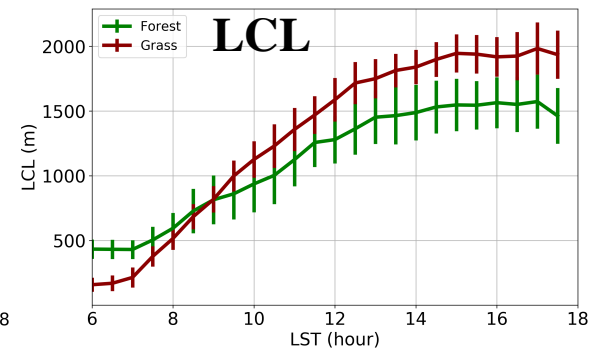
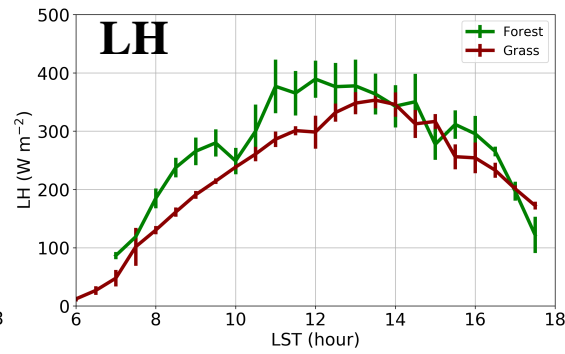
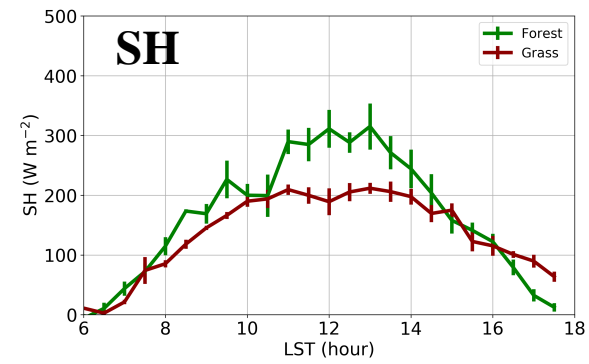


FIG. 6. Snapshot of the COGS 4D reconstruction of clouds over a 6-km-wide square domain centered on the SGP CF.

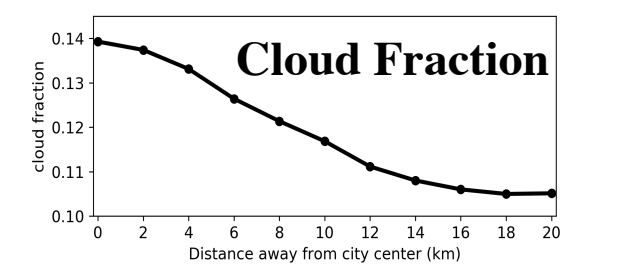
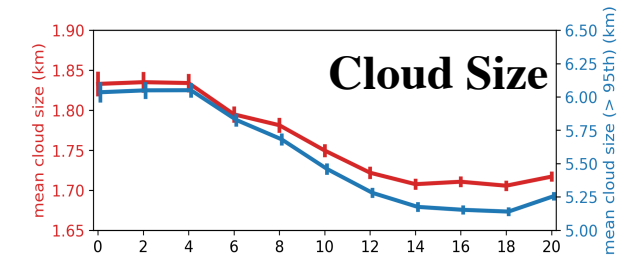
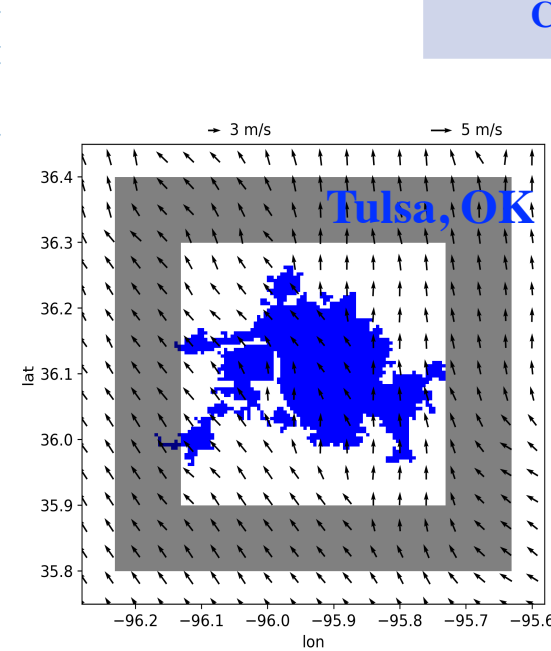
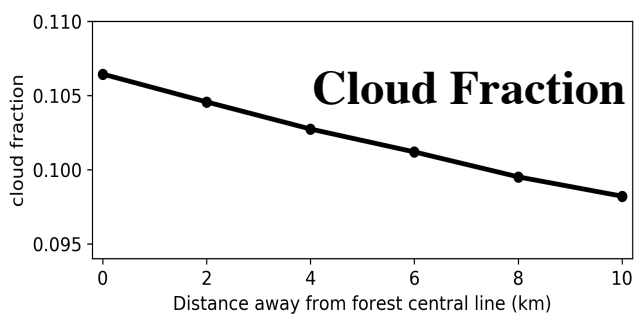
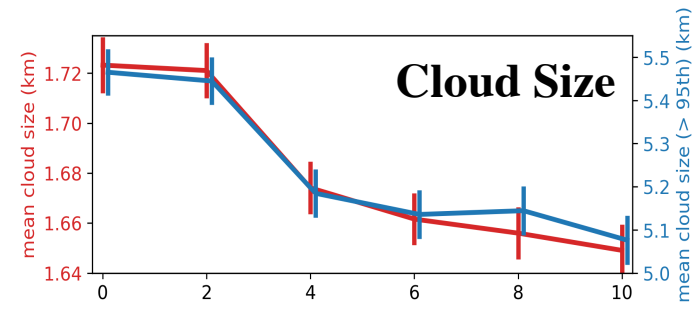
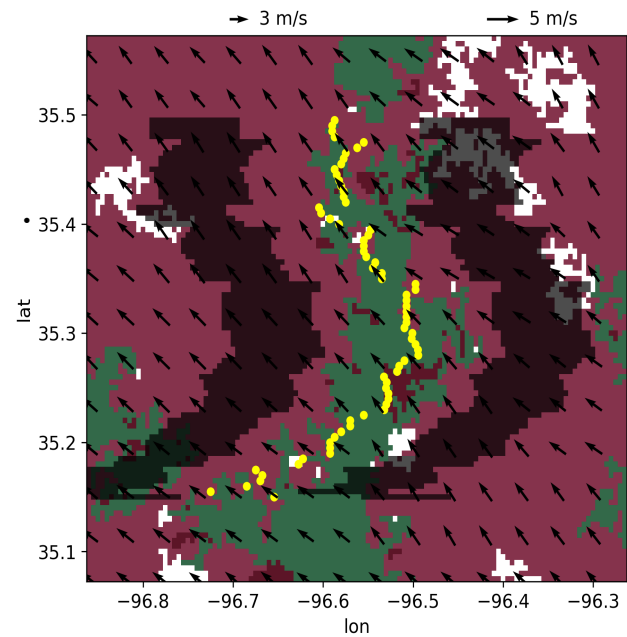
## Scientific Questions :

- Are there any preferences of the **ShCu occurrence** and **cloud size** over different **homogeneous** land covers (city / grass / forest)?
- Are there any differences of the **ShCu occurrence** and **cloud size** around the **heterogeneous** land cover boundaries?





	Cloud Fraction	Cloud Size (km)
<b>Forest (Homo)</b>	<b>0.087</b>	<b>1.70</b>
<b>Grass (Homo)</b>	<b>0.066</b>	<b>1.55</b>
<b>Forest (Heter)</b>	<b>0.106</b>	<b>1.73</b>
<b>Grass (Heter)</b>	<b>0.098</b>	<b>1.65</b>
<b>City</b>	<b>0.140</b>	<b>1.83</b>



- ❑ Differential heating of the atmosphere by a heterogeneous land cover can induce a secondary circulation that influences the turbulent transport in the PBL and the development of ShCu.
- ❑ ShCu cloud fraction and cloud size:  
City > Heterogeneous forest-grass boundaries > Homogenous forest > Homogenous grass