

# B-fields and gas motion in the L1689 region: an interpretation of Planck polarization data

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**Abstract.** With using the Planck polarization data (PR2, [Planck Collaboration \*et al.\* 2016](#)), we investigate the magnetic fields in L1689 and associated clouds, and compare them with centroid velocities  $V_{\text{LSR}}$  of  $^{12}\text{CO}$  and  $^{13}\text{CO}$  from the COMPLETE survey ([Ridge \*et al.\* 2006](#)). We observe two components in this elongated region: in one component, the position angle of the magnetic field varies from  $-10$  to  $110$  degrees in the galactic coordinate, while  $V_{\text{LSR}}$  is rather constant ( $= 4 \pm 0.5$  km/s). In the other component with the position angle being constant ( $= 110 \pm 15$  degrees), the velocity  $V_{\text{LSR}}$  shows a spatial gradient from 3 to 5 km/s, as one goes from west to east along the direction of elongation. If the east side of the component is more distant from us than the west, this gradient suggests that this component is stretching. This work is supported by JSPS KAKENHI Grant Number JP18H03720 (PI: Koji S. Kawabata).

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## References

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Ridge, N. A., Di Francesco, J., Kirk, H., *et al.* 2006, *AJ*, 131, 2921