



Universiteit  
Leiden  
The Netherlands

## Mining the kinematics of discs to hunt for planets in formation

Izquierdo Cartagena, A.F.

### Citation

Izquierdo Cartagena, A. F. (2023, December 1). *Mining the kinematics of discs to hunt for planets in formation*. Retrieved from <https://hdl.handle.net/1887/3665447>

Version: Publisher's Version

[Licence agreement concerning inclusion of doctoral thesis in the Institutional Repository of the University of Leiden](#)

License: <https://hdl.handle.net/1887/3665447>

**Note:** To cite this publication please use the final published version (if applicable).

---

# Bibliography

---

- Adams, F. C., Lada, C. J., & Shu, F. H. 1987, ApJ, 312, 788
- ALMA Partnership, Brogan, C. L., Pérez, L. M., et al. 2015, ApJ, 808, L3
- André, P., Ward-Thompson, D., & Barsony, M. 1993, ApJ, 406, 122
- Andrews, S. M. 2020, ARA&A, 58, 483
- Andrews, S. M., Huang, J., Pérez, L. M., et al. 2018, ApJ, 869, L41
- Armitage, P. J. 2011, ARA&A, 49, 195
- Bae, J., Isella, A., Zhu, Z., et al. 2023, in Astronomical Society of the Pacific Conference Series, Vol. 534, Astronomical Society of the Pacific Conference Series, ed. S. Inutsuka, Y. Aikawa, T. Muto, K. Tomida, & M. Tamura, 423
- Bae, J., Teague, R., Andrews, S. M., et al. 2022, ApJ, 934, L20
- Bae, J., Teague, R., & Zhu, Z. 2021, ApJ, 912, 56
- Bae, J., Zhu, Z., & Hartmann, L. 2016, ApJ, 819, 134
- Bae, J., Zhu, Z., & Hartmann, L. 2017, ApJ, 850, 201
- Bailer-Jones, C. A. L., Rybizki, J., Fouesneau, M., Mantelet, G., & Andrae, R. 2018, AJ, 156, 58
- Barraza-Alfaro, M., Flock, M., Marino, S., & Pérez, S. 2021, A&A, 653, A113
- Barsony, M. 1994, in Astronomical Society of the Pacific Conference Series, Vol. 65, Clouds, Cores, and Low Mass Stars, ed. D. P. Clemens & R. Barvainis, 197
- Bastien, P. 1982, A&AS, 48, 153
- Beckwith, S. V. W. & Sargent, A. I. 1993a, ApJ, 402, 280
- Beckwith, S. V. W. & Sargent, A. I. 1993b, in Protostars and Planets III, ed. E. H. Levy & J. I. Lunine, 521

- Benisty, M., Juhasz, A., Boccaletti, A., et al. 2015, *A&A*, 578, L6
- Benítez-Llambay, P. & Masset, F. S. 2016, *ApJS*, 223, 11
- Benz, W., Ida, S., Alibert, Y., Lin, D., & Mordasini, C. 2014, in *Protostars and Planets VI*, ed. H. Beuther, R. S. Klessen, C. P. Dullemond, & T. Henning, 691
- Bertin, G. & Lodato, G. 1999, *A&A*, 350, 694
- Bollati, F., Lodato, G., Price, D. J., & Pinte, C. 2021, *MNRAS*, 504, 5444
- Booth, A. S., Walsh, C., Terwisscha van Scheltinga, J., et al. 2021, *Nature Astronomy*, 5, 684
- Brown, J. M., Blake, G. A., Dullemond, C. P., et al. 2007, *ApJ*, 664, L107
- Bruderer, S. 2013, *A&A*, 559, A46
- Bruderer, S., van der Marel, N., van Dishoeck, E. F., & van Kempen, T. A. 2014, *A&A*, 562, A26
- Bruderer, S., van Dishoeck, E. F., Doty, S. D., & Herczeg, G. J. 2012, *A&A*, 541, A91
- Burrows, A., Hubbard, W. B., Saumon, D., & Lunine, J. I. 1993, *ApJ*, 406, 158
- Burrows, C. J., Stapelfeldt, K. R., Watson, A. M., et al. 1996, *ApJ*, 473, 437
- Calcino, J., Christiaens, V., Price, D. J., et al. 2020, *MNRAS*, 498, 639
- Calcino, J., Hilder, T., Price, D. J., et al. 2022, *ApJ*, 929, L25
- Calvet, N., D'Alessio, P., Watson, D. M., et al. 2005, *ApJ*, 630, L185
- Casassus, S., Cárcamo, M., Hales, A., Weber, P., & Dent, B. 2022, *ApJ*, 933, L4
- Casassus, S., Christiaens, V., Cárcamo, M., et al. 2021, *MNRAS*, 507, 3789
- Casassus, S. & Pérez, S. 2019, *ApJ*, 883, L41
- Cazzoletti, P., van Dishoeck, E. F., Pinilla, P., et al. 2018, *A&A*, 619, A161
- Cohen, M. 1983, *ApJ*, 270, L69
- Cuello, N., Ménard, F., & Price, D. J. 2022, arXiv e-prints, arXiv:2207.09752
- Currie, T., Lawson, K., Schneider, G., et al. 2022, *Nature Astronomy*, 6, 751
- Czekala, I., Andrews, S. M., Jensen, E. L. N., et al. 2015, *ApJ*, 806, 154
- Czekala, I., Andrews, S. M., Torres, G., et al. 2017, *ApJ*, 851, 132
- Czekala, I., Loomis, R. A., Teague, R., et al. 2021, *ApJS*, 257, 2
- D'Alessio, P., Hartmann, L., Calvet, N., et al. 2005, *ApJ*, 621, 461

- Dartois, E., Dutrey, A., & Guilloteau, S. 2003, *A&A*, 399, 773
- de Gregorio-Monsalvo, I., Ménard, F., Dent, W., et al. 2013, *A&A*, 557, A133
- Dipierro, G., Price, D., Laibe, G., et al. 2015, *MNRAS*, 453, L73
- Disk Dynamics Collaboration, Armitage, P. J., Bae, J., et al. 2020, arXiv e-prints, arXiv:2009.04345
- Dong, R., Liu, S.-Y., & Fung, J. 2019, *ApJ*, 870, 72
- Dong, R., Zhu, Z., Rafikov, R. R., & Stone, J. M. 2015, *ApJ*, 809, L5
- Dullemond, C. P., Isella, A., Andrews, S. M., Skobleva, I., & Dzyurkevich, N. 2020, *A&A*, 633, A137
- Dullemond, C. P., Juhasz, A., Pohl, A., et al. 2012, RADMC-3D: A multi-purpose radiative transfer tool, *Astrophysics Source Code Library*, record ascl:1202.015
- Dunham, M. M., Stutz, A. M., Allen, L. E., et al. 2014, in *Protostars and Planets VI*, ed. H. Beuther, R. S. Klessen, C. P. Dullemond, & T. Henning, 195–218
- Dutrey, A., Guilloteau, S., Piétu, V., et al. 2017, *A&A*, 607, A130
- Dutrey, A., Semenov, D., Chapillon, E., et al. 2014, in *Protostars and Planets VI*, ed. H. Beuther, R. S. Klessen, C. P. Dullemond, & T. Henning, 317
- Elsasser, H. & Staude, H. J. 1978, *A&A*, 70, L3
- Espaillat, C., Calvet, N., D'Alessio, P., et al. 2007, *ApJ*, 670, L135
- Espaillat, C., Muñoz, J., Najita, J., et al. 2014, in *Protostars and Planets VI*, ed. H. Beuther, R. S. Klessen, C. P. Dullemond, & T. Henning, 497–520
- Facchini, S., Benisty, M., Bae, J., et al. 2020, *A&A*, 639, A121
- Facchini, S., Juhász, A., & Lodato, G. 2018a, *MNRAS*, 473, 4459
- Facchini, S., Pinilla, P., van Dishoeck, E. F., & de Juan Ovelar, M. 2018b, *A&A*, 612, A104
- Facchini, S., Teague, R., Bae, J., et al. 2021, *AJ*, 162, 99
- Fedele, D., Tazzari, M., Booth, R., et al. 2018, *A&A*, 610, A24
- Federrath, C. 2018, *Physics Today*, 71, 38
- Flaherty, K., Hughes, A. M., Simon, J. B., et al. 2020, *ApJ*, 895, 109
- Flaherty, K. M., Hughes, A. M., Rose, S. C., et al. 2017, *ApJ*, 843, 150
- Flaherty, K. M., Hughes, A. M., Rosenfeld, K. A., et al. 2015, *ApJ*, 813, 99
- Foreman-Mackey, D., Hogg, D. W., Lang, D., & Goodman, J. 2013, *PASP*, 125, 306

- Fu, W., Li, H., Lubow, S., & Li, S. 2014, ApJ, 788, L41
- Fung, J. & Chiang, E. 2016, ApJ, 832, 105
- Galloway-Sprietsma, M., Bae, J., Teague, R., et al. 2023, ApJ, 950, 147
- Garufi, A., Quanz, S. P., Avenhaus, H., et al. 2013, A&A, 560, A105
- Gatto, A., Walch, S., Low, M. M. M., et al. 2015, MNRAS, 449, 1057
- Goldreich, P. & Tremaine, S. 1980, ApJ, 241, 425
- Goodman, J. & Rafikov, R. R. 2001, ApJ, 552, 793
- Grady, C. A., Devine, D., Woodgate, B., et al. 2000, ApJ, 544, 895
- Grady, C. A., Muto, T., Hashimoto, J., et al. 2013, ApJ, 762, 48
- Grasdalen, G. L., Strom, S. E., Strom, K. M., et al. 1984, ApJ, 283, L57
- Gratton, R., Ligi, R., Sissa, E., et al. 2019, A&A, 623, A140
- Guzmán, V. V., Bergner, J. B., Law, C. J., et al. 2021, ApJS, 257, 6
- Guzmán, V. V., Huang, J., Andrews, S. M., et al. 2018, ApJ, 869, L48
- Gyeol Yun, H., Kim, W.-T., Bae, J., & Han, C. 2019, ApJ, 884, 142
- Habart, E., Walmsley, M., Verstraete, L., et al. 2005, Space Sci. Rev., 119, 71
- Hacar, A., Alves, J., Burkert, A., & Goldsmith, P. 2016, A&A, 591, A104
- Haffert, S. Y., Bohn, A. J., de Boer, J., et al. 2019, Nature Astronomy, 3, 749
- Hammer, M., Kratter, K. M., & Lin, M.-K. 2017, MNRAS, 466, 3533
- Hartmann, L., Calvet, N., Gullbring, E., & D'Alessio, P. 1998, ApJ, 495, 385
- Hayashi, C. 1961, PASJ, 13, 450
- Hayashi, C. 1966, ARA&A, 4, 171
- Henning, T. & Semenov, D. 2013, Chemical Reviews, 113, 9016
- Hodapp, K. W. 1984, A&A, 141, 255
- Hollenbach, D. J. & Tielens, A. G. G. M. 1999, Reviews of Modern Physics, 71, 173
- Huang, J., Andrews, S. M., Dullemond, C. P., et al. 2018a, ApJ, 869, L42
- Huang, J., Andrews, S. M., Dullemond, C. P., et al. 2020, ApJ, 891, 48
- Huang, J., Andrews, S. M., Pérez, L. M., et al. 2018b, ApJ, 869, L43
- Huang, J., Bergin, E. A., Öberg, K. I., et al. 2021, ApJS, 257, 19

- Huang, P., Isella, A., Li, H., Li, S., & Ji, J. 2018c, *ApJ*, 867, 3
- Ilee, J. D., Walsh, C., Booth, A. S., et al. 2021, *ApJS*, 257, 9
- Isella, A., Guidi, G., Testi, L., et al. 2016, *Phys. Rev. Lett.*, 117, 251101
- Isella, A., Huang, J., Andrews, S. M., et al. 2018, *ApJ*, 869, L49
- Izquierdo, A. F., Facchini, S., Rosotti, G. P., van Dishoeck, E. F., & Testi, L. 2022, *ApJ*, 928, 2
- Izquierdo, A. F., Galván-Madrid, R., Maud, L. T., et al. 2018, *MNRAS*, 478, 2505
- Izquierdo, A. F., Smith, R. J., Glover, S. C. O., et al. 2021a, *MNRAS*, 500, 5268
- Izquierdo, A. F., Testi, L., Facchini, S., Rosotti, G. P., & van Dishoeck, E. F. 2021b, *A&A*, 650, A179
- Izquierdo, A. F., Testi, L., Facchini, S., et al. 2023, *A&A*, 674, A113
- Jiang, H., Zhu, W., & Ormel, C. W. 2022, *ApJ*, 924, L31
- Johansen, A. & Lambrechts, M. 2017, *Annual Review of Earth and Planetary Sciences*, 45, 359
- Jonkheid, B., Faas, F. G. A., van Zadelhoff, G. J., & van Dishoeck, E. F. 2004, *A&A*, 428, 511
- Kama, M., Trapman, L., Fedele, D., et al. 2020, *A&A*, 634, A88
- Kamp, I. & Dullemond, C. P. 2004, *ApJ*, 615, 991
- Kanagawa, K. D., Tanaka, H., Muto, T., & Tanigawa, T. 2017, *PASJ*, 69, 97
- Kanagawa, K. D., Tanaka, H., Muto, T., Tanigawa, T., & Takeuchi, T. 2015, *MNRAS*, 448, 994
- Keppler, M., Benisty, M., Müller, A., et al. 2018, *A&A*, 617, A44
- Koch, E. W. & Rosolowsky, E. W. 2015, *MNRAS*, 452, 3435
- Kratter, K. & Lodato, G. 2016, *ARA&A*, 54, 271
- Lada, C. J. 1987, in *Star Forming Regions*, ed. M. Peimbert & J. Jugaku, Vol. 115, 1
- Lagrange, A. M., Bonnefoy, M., Chauvin, G., et al. 2010, *Science*, 329, 57
- Law, C. J., Loomis, R. A., Teague, R., et al. 2021a, *ApJS*, 257, 3
- Law, C. J., Teague, R., Loomis, R. A., et al. 2021b, *ApJS*, 257, 4
- Le Gal, R., Öberg, K. I., Teague, R., et al. 2021, *ApJS*, 257, 12
- Leemker, M., van't Hoff, M. L. R., Trapman, L., et al. 2021, *A&A*, 646, A3

- Lesur, G., Flock, M., Ercolano, B., et al. 2023, in Astronomical Society of the Pacific Conference Series, Vol. 534, Astronomical Society of the Pacific Conference Series, ed. S. Inutsuka, Y. Aikawa, T. Muto, K. Tomida, & M. Tamura, 465
- Lindblad B., B. 1962, in Problems of Extra-Galactic Research, ed. G. C. McVittie, Vol. 15, 146
- Lindblad P.O., P. O. 1961, Soviet Astronomy, 5, 376
- Liu, S.-F., Jin, S., Li, S., Isella, A., & Li, H. 2018, ApJ, 857, 87
- Liu, Y., Dipierro, G., Ragusa, E., et al. 2019, A&A, 622, A75
- Lloyd, S. 1982, IEEE Transactions on Information Theory, 28, 129
- Lodato, G., Rampinelli, L., Viscardi, E., et al. 2022, arXiv e-prints, arXiv:2211.03712
- Long, F., Pinilla, P., Herczeg, G. J., et al. 2018, ApJ, 869, 17
- Lubow, S. H. & Zhu, Z. 2014, ApJ, 785, 32
- Lynden-Bell, D. & Pringle, J. E. 1974a, MNRAS, 168, 603
- Lynden-Bell, D. & Pringle, J. E. 1974b, MNRAS, 168, 603
- MacQueen, J. 1967, Proc. 5th Berkeley Symp. Math. Stat. Probab., 1, 281
- Marsh, K. A. & Mahoney, M. J. 1992, ApJ, 395, L115
- Marsh, K. A. & Mahoney, M. J. 1993, ApJ, 405, L71
- Mathis, J. S., Mezger, P. G., & Panagia, N. 1983, A&A, 500, 259
- Miotello, A., Bruderer, S., & van Dishoeck, E. F. 2014, A&A, 572, A96
- Miotello, A., Kamp, I., Birnstiel, T., Cleeves, L. C., & Kataoka, A. 2023, in Astronomical Society of the Pacific Conference Series, Vol. 534, Astronomical Society of the Pacific Conference Series, ed. S. Inutsuka, Y. Aikawa, T. Muto, K. Tomida, & M. Tamura, 501
- Miotello, A., van Dishoeck, E. F., Kama, M., & Bruderer, S. 2016, A&A, 594, A85
- Miranda, R. & Rafikov, R. R. 2020, ApJ, 892, 65
- Morbidelli, A., Szulágyi, J., Crida, A., et al. 2014, ICARUS, 232, 266
- Müller, T. W. A., Kley, W., & Meru, F. 2012, A&A, 541, A123
- Muto, T., Grady, C. A., Hashimoto, J., et al. 2012, ApJ, 748, L22
- Öberg, K. I. & Bergin, E. A. 2021, Phys. Rep., 893, 1
- Öberg, K. I., Guzmán, V. V., Walsh, C., et al. 2021, ApJS, 257, 1

- Öberg, K. I., Qi, C., Fogel, J. K. J., et al. 2011, *ApJ*, 734, 98
- O'Dell, C. R. & Wen, Z. 1994, *ApJ*, 436, 194
- Paneque-Carreño, T., Miotello, A., van Dishoeck, E. F., et al. 2023, *A&A*, 669, A126
- Paneque-Carreño, T., Pérez, L. M., Benisty, M., et al. 2021, *ApJ*, 914, 88
- Papaloizou, J. & Lin, D. N. C. 1984, *ApJ*, 285, 818
- Pedregosa, F., Varoquaux, G., Gramfort, A., et al. 2011, *Journal of Machine Learning Research*, 12, 2825
- Pérez, L. M., Carpenter, J. M., Andrews, S. M., et al. 2016, *Science*, 353, 1519
- Pérez, S., Casassus, S., & Benítez-Llambay, P. 2018, *MNRAS*, 480, L12
- Perez, S., Casassus, S., Ménard, F., et al. 2015, *ApJ*, 798, 85
- Pérez, S., Dunhill, A., Casassus, S., et al. 2015, *ApJ*, 811, L5
- Piétu, V., Dutrey, A., & Guilloteau, S. 2007, *A&A*, 467, 163
- Pinilla, P., Natta, A., Manara, C. F., et al. 2018, *A&A*, 615, A95
- Pinte, C., Ménard, F., Duchêne, G., et al. 2018a, *A&A*, 609, A47
- Pinte, C., Price, D. J., Ménard, F., et al. 2020, *ApJ*, 890, L9
- Pinte, C., Price, D. J., Ménard, F., et al. 2018b, *ApJ*, 860, L13
- Pinte, C., Teague, R., Flaherty, K., et al. 2023, in *Astronomical Society of the Pacific Conference Series*, Vol. 534, *Astronomical Society of the Pacific Conference Series*, ed. S. Inutsuka, Y. Aikawa, T. Muto, K. Tomida, & M. Tamura, 645
- Pinte, C., van der Plas, G., Ménard, F., et al. 2019, *Nature Astronomy*, 3, 1109
- Price, D. J., Cuello, N., Pinte, C., et al. 2018, *MNRAS*, 477, 1270
- Pringle, J. E. 1981, *ARA&A*, 19, 137
- Rab, C., Kamp, I., Dominik, C., et al. 2020, *A&A*, 642, A165
- Rabago, I. & Zhu, Z. 2021, *MNRAS*, 502, 5325
- Rafikov, R. R. 2002a, *ApJ*, 569, 997
- Rafikov, R. R. 2002b, *ApJ*, 572, 566
- Rameau, J., Chauvin, G., Lagrange, A. M., et al. 2013, *ApJ*, 779, L26
- Reissl, S., Wolf, S., & Brauer, R. 2016, *A&A*, 593, A87

- Rosenfeld, K. A., Andrews, S. M., Hughes, A. M., Wilner, D. J., & Qi, C. 2013, *ApJ*, 774, 16
- Rosotti, G. P. 2023, *New Astronomy Review*, 96, 101674
- Rosotti, G. P., Benisty, M., Juhász, A., et al. 2020a, *MNRAS*, 491, 1335
- Rosotti, G. P., Benisty, M., Juhász, A., et al. 2020b, *MNRAS*, 491, 1335
- Rosotti, G. P., Teague, R., Dullemond, C., Booth, R. A., & Clarke, C. J. 2020c, *MNRAS*, 495, 173
- Rosotti, G. P., Teague, R., Dullemond, C., Booth, R. A., & Clarke, C. J. 2020d, *MNRAS*, 495, 173
- Rucinski, S. M. 1985, *AJ*, 90, 2321
- Sanchis, E., Picogna, G., Ercolano, B., Testi, L., & Rosotti, G. 2020, *MNRAS*, 492, 3440
- Sargent, A. I. & Beckwith, S. 1987, *ApJ*, 323, 294
- Schwarz, K. R., Calahan, J. K., Zhang, K., et al. 2021, *ApJS*, 257, 20
- Smith, R. J., Treß, R. G., Sormani, M. C., et al. 2020, *MNRAS*, 492, 1594
- Snell, R. L., Loren, R. B., & Plambeck, R. L. 1980, *ApJ*, 239, L17
- Stadler, J., Benisty, M., Izquierdo, A., et al. 2023, *A&A*, 670, L1
- Stolker, T., Dominik, C., Avenhaus, H., et al. 2016, *A&A*, 595, A113
- Tanigawa, T., Ohtsuki, K., & Machida, M. N. 2012, *ApJ*, 747, 47
- Teague, R., Bae, J., Aikawa, Y., et al. 2021a, *ApJS*, 257, 18
- Teague, R., Bae, J., Andrews, S. M., et al. 2022, *ApJ*, 936, 163
- Teague, R., Bae, J., & Bergin, E. A. 2019a, *Nature*, 574, 378
- Teague, R., Bae, J., Bergin, E. A., Birnstiel, T., & Foreman-Mackey, D. 2018a, *ApJ*, 860, L12
- Teague, R., Bae, J., Birnstiel, T., & Bergin, E. A. 2018b, *ApJ*, 868, 113
- Teague, R., Bae, J., Huang, J., & Bergin, E. A. 2019b, *ApJ*, 884, L56
- Teague, R. & Foreman-Mackey, D. 2018, *Research Notes of the American Astronomical Society*, 2, 173
- Teague, R., Guilloteau, S., Semenov, D., et al. 2016, *A&A*, 592, A49
- Teague, R., Jankovic, M. R., Haworth, T. J., Qi, C., & Ilee, J. D. 2020, *MNRAS*, 495, 451

- Teague, R., Law, C., Huang, J., & Meng, F. 2021b, The Journal of Open Source Software, 6, 3827
- Testi, L., Birnstiel, T., Ricci, L., et al. 2014, in Protostars and Planets VI, ed. H. Beuther, R. S. Klessen, C. P. Dullemond, & T. Henning, 339
- Testi, L., Skemer, A., Henning, T., et al. 2015, ApJ, 812, L38
- Thi, W. F., van Dishoeck, E. F., Blake, G. A., et al. 2001, ApJ, 561, 1074
- Toomre, A. 1969, ApJ, 158, 899
- Turner, N. J., Choukroun, M., Castillo-Rogez, J., & Bryden, G. 2012, ApJ, 748, 92
- Tychoniec, Ł., Manara, C. F., Rosotti, G. P., et al. 2020, A&A, 640, A19
- Ubeira Gabellini, M. G., Miotello, A., Facchini, S., et al. 2019, MNRAS, 486, 4638
- van der Marel, N. 2023, European Physical Journal Plus, 138, 225
- van der Marel, N., Cazzoletti, P., Pinilla, P., & Garufi, A. 2016a, ApJ, 832, 178
- van der Marel, N., van Dishoeck, E. F., Bruderer, S., et al. 2016b, A&A, 585, A58
- van der Marel, N., van Dishoeck, E. F., Bruderer, S., Pérez, L., & Isella, A. 2015, A&A, 579, A106
- van Dishoeck, E. F. & Bergin, E. A. 2020, arXiv e-prints, arXiv:2012.01472
- van Dishoeck, E. F. & Black, J. H. 1988, ApJ, 334, 771
- van Zadelhoff, G. J., van Dishoeck, E. F., Thi, W. F., & Blake, G. A. 2001, A&A, 377, 566
- Veronesi, B., Paneque-Carreño, T., Lodato, G., et al. 2021, ApJ, 914, L27
- Verriros, H. J., Price, D. J., Pinte, C., Hilder, T., & Calcino, J. 2022, ApJ, 934, L11
- Wagner, K., Stone, J., Skemer, A., et al. 2023, Nature Astronomy [arXiv:2307.04021]
- Walsh, C., Millar, T. J., & Nomura, H. 2010, ApJ, 722, 1607
- Weaver, E., Isella, A., & Boehler, Y. 2018, ApJ, 853, 113
- Weingartner, J. C. & Draine, B. T. 2001, ApJ, 548, 296
- Williams, J. P. & Best, W. M. J. 2014, ApJ, 788, 59
- Woitke, P., Min, M., Pinte, C., et al. 2016, A&A, 586, A103
- Wölfer, L., Facchini, S., Kurtovic, N. T., et al. 2021, A&A, 648, A19

- Wölfer, L., Facchini, S., van der Marel, N., et al. 2022, arXiv e-prints, arXiv:2208.09494
- Wölfer, L., Facchini, S., van der Marel, N., et al. 2023, A&A, 670, A154
- Wolfire, M. G. & Konigl, A. 1991, ApJ, 383, 205
- Yu, H., Teague, R., Bae, J., & Öberg, K. 2021, ApJ, 920, L33
- Zhang, K., Booth, A. S., Law, C. J., et al. 2021, ApJS, 257, 5
- Zhang, S. & Zhu, Z. 2020, MNRAS, 493, 2287
- Zhang, S., Zhu, Z., Huang, J., et al. 2018, ApJ, 869, L47
- Zhu, Z., Stone, J. M., & Rafikov, R. R. 2012, ApJ, 758, L42