

周定一

學歷

- 美國加州理工學院 (California Institute of Technology) 天文物理博士 (1981/09-1986/09)
- 國立清華大學物理系學士 (1973/09-1977/06)

經歷

- 國立清華大學物理系教授 (1992/08-)
- 國立清華大學物理系副教授 (1987/08-1992/07)
- University of Hawaii, Institute for Astronomy, Post Doctor (1986/10-1987/09)

榮譽與獎項

- 87 學年度國科會傑出研究獎

研究領域

- 天文物理, 太陽內部, 恆星內部

教學

- 物理系與天文所 21 門課

Professor Dean-Yi Chou

Refereed Papers¹⁻⁷⁰

1. Yang, M. H.; Chou, D. Y., Scattering Matrix for the Interaction between Solar Acoustic Waves and Sunspots. II. Theory. *ASTROPHYSICAL JOURNAL* **2020**, 892 (1).
2. Lin, C. H.; Chou, D. Y., Solar-cycle Variations of Meridional Flows in the Solar Convection Zone Using Helioseismic Methods. *ASTROPHYSICAL JOURNAL* **2018**, 860 (1).
3. Fernandez, J. F.; Chou, D. Y., Study of CoRoT 105415473: A Heartbeat Star with delta Scuti Oscillations. *PUBLICATIONS OF THE ASTRONOMICAL SOCIETY OF THE PACIFIC* **2018**, 130 (990).
4. Yang, M. H.; Chou, D. Y.; Zhao, H., SCATTERING MATRIX FOR THE INTERACTION BETWEEN SOLAR ACOUSTIC WAVES AND SUNSPOTS. I. MEASUREMENTS. *ASTROPHYSICAL JOURNAL* **2017**, 835 (1).
5. Zhao, H.; Chou, D. Y., MEASUREMENTS OF THE ABSORPTION AND SCATTERING CROSS SECTIONS FOR THE INTERACTION OF SOLAR ACOUSTIC WAVES WITH SUNSPOTS. *ASTROPHYSICAL JOURNAL* **2016**, 822 (1).
6. Liang, Z. C.; Chou, D. Y., EFFECTS OF SOLAR SURFACE MAGNETIC FIELDS ON THE TIME-DISTANCE ANALYSIS OF SOLAR SUBSURFACE MERIDIONAL FLOWS. *ASTROPHYSICAL JOURNAL* **2015**, 805 (2).
7. Liang, Z. C.; Chou, D. Y., PROBING MAGNETIC FIELDS AT THE BASE OF THE SOLAR CONVECTION ZONE WITH MERIDIONAL FLOWS. *ASTROPHYSICAL JOURNAL* **2015**, 809 (2).
8. Fernandez, J. F.; Chou, D. Y., Corot 310266512: A Light Curve With Primary, Secondary And Tertiary Eclipses. In *SPACE PHOTOMETRY REVOLUTION - COROT SYMPOSIUM 3, KEPLER KASC-7 JOINT MEETING*, 2015; Vol. 101.
9. Fernandez, J. F.; Chou, D. Y., Study of COROT 310266512: A Light Curve with Primary, Secondary, and Tertiary Eclipses. *PUBLICATIONS OF THE ASTRONOMICAL SOCIETY OF THE PACIFIC* **2015**, 127 (951), 421-427.
10. Zhao, J. W.; Chou, D. Y., Analysis of the Helioseismic Power-Spectrum Diagram of a Sunspot. *SOLAR PHYSICS* **2013**, 287 (1-2), 149-159.
11. Zhao, H.; Chou, D. Y., MODE CONVERSION BETWEEN DIFFERENT RADIAL ORDERS FOR SOLAR ACOUSTIC WAVES SCATTERED BY SUNSPOTS. *ASTROPHYSICAL JOURNAL* **2013**, 778 (1).

12. Fernandez, J. F.; Chou, D. Y.; Wang, L. H.; Sun, M. T.; Jimenez, A.; Serebryanskiy, A.; Strel'nikov, D.; Ehgamberdiev, S., Mode Parameters of delta Scuti Stars V830 Her and HD 163032 with Four-Year Data from the Taiwan Automated Telescope Network. *PUBLICATIONS OF THE ASTRONOMICAL SOCIETY OF THE PACIFIC* **2013**, *125* (923), 31-40.
13. Chou, D. Y.; Zhao, H., The Wavefunctions of Solar Acoustic Waves Scattered by Sunspots. In *PROGRESS IN PHYSICS OF THE SUN AND STARS: A NEW ERA IN HELIO- AND ASTEROSEISMOLOGY*, 2013; Vol. 479, pp 419-424.
14. Yang, M. H.; Chou, D. Y.; Zhao, H.; Liang, Z. C., PHENOMENOLOGICAL STUDY OF INTERACTION BETWEEN SOLAR ACOUSTIC WAVES AND SUNSPOTS FROM MEASURED SCATTERED WAVEFUNCTIONS. *ASTROPHYSICAL JOURNAL* **2012**, *755* (1).
15. Fernandez, J. F.; Chou, D. Y.; Pan, Y. C.; Wang, L. H., An Improved Method for Differential Photometry. *PUBLICATIONS OF THE ASTRONOMICAL SOCIETY OF THE PACIFIC* **2012**, *124* (915), 507-512.
16. Chou, D. Y.; Zhao, H.; Yang, M. H.; Liang, Z. C., INTERFERENCE FRINGES OF SOLAR ACOUSTIC WAVES AROUND SUNSPOTS. *ASTROPHYSICAL JOURNAL* **2012**, *758* (2).
17. Zhao, H.; Chou, D. Y.; Yang, M. H.; Liang, Z. C.; Sun, M. T., Corrections to the Magnitude of Cross-Correlation Functions for Dispersion of Solar Acoustic Waves. *SOLAR PHYSICS* **2011**, *268* (2), 363-376.
18. Zhao, H.; Chou, D. Y.; Yang, M. H., MEASUREMENTS OF THE WAVEFUNCTIONS OF SOLAR ACOUSTIC WAVES SCATTERED BY SUNSPOTS. *ASTROPHYSICAL JOURNAL* **2011**, *740* (2).
19. Chou, D. Y.; Sun, M. T.; Fernandez, J. F.; Wang, L. H.; Jimenez, A.; Serebryanskiy, A.; Ehgamberdiev, S., Taiwan Automated Telescope Network. *ADVANCES IN ASTRONOMY* **2010**, *2010*.
20. Chou, D. Y.; Yang, M. H.; Zhao, H.; Liang, Z. C.; Sun, M. T., SPATIAL DISTRIBUTIONS OF ABSORPTION, LOCAL SUPPRESSION, AND EMISSIVITY REDUCTION OF SOLAR ACOUSTIC WAVES IN MAGNETIC REGIONS. *ASTROPHYSICAL JOURNAL* **2009**, *706* (1), 909-916.
21. Chou, D. Y.; Yang, M. H.; Liang, Z. C.; Sun, M. T., MEASUREMENTS OF ABSORPTION OF ACOUSTIC WAVES IN SUNSPOTS WITH DIRECTION FILTERS AND CROSS CORRELATION. *ASTROPHYSICAL JOURNAL LETTERS* **2009**, *690* (1), L23-L26.
22. Chou, D. Y.; Liang, Z. C.; Yang, M. H.; Zhao, H.; Sun, M. T., MEASUREMENTS OF ABSORPTION, EMISSIVITY REDUCTION, AND LOCAL SUPPRESSION OF SOLAR ACOUSTIC WAVES IN SUNSPOTS. *ASTROPHYSICAL JOURNAL LETTERS* **2009**, *696* (1), L106-L109.
23. Chou, D. Y.; Liang, Z. C.; Yang, M. H.; Sun, M. T., Acoustic-Power Maps of

Solar Active Regions with Direction Filters and Phase-Velocity Filters. *SOLAR PHYSICS* **2009**, 255 (1), 39-51.

24. Burtseva, O.; Hill, F.; Kholikov, S.; Chou, D. Y., Lifetimes of High-Degree p Modes in the Quiet and Active Sun. *SOLAR PHYSICS* **2009**, 258 (1), 1-11.

25. Chou, D. Y., Acoustic Holograms of Active Regions. In *PROCEEDINGS OF THE SECOND HELAS INTERNATIONAL CONFERENCE: HELIOSEISMOLOGY, ASTEROSEISMOLOGY AND MHD CONNECTIONS*, 2008; Vol. 118.

26. Chou, D. Y.; Ladenkov, O., Effects of dispersion of wave packets in the determination of lifetimes of high-degree solar p modes from time-distance analysis: MDI data. *SOLAR PHYSICS* **2007**, 241 (1), 7-15.

27. Chou, D. Y., Local helioseismology. In *NEW SOLAR PHYSICS WITH SOLAR-B MISSION*, 2007; Vol. 369, pp 313-324.

28. Burtseva, O.; Kholikov, S.; Serebryanskiy, A.; Chou, D. Y., Effects of dispersion of wave packets in the determination of lifetimes of high-degree solar p modes from time-distance analysis: TON data. *SOLAR PHYSICS* **2007**, 241 (1), 17-25.

29. Chou, D. Y.; Sun, M. T.; Yang, M. H., Earthshine and asteroseismology telescope (EAST) Network. *SPACE SCIENCE REVIEWS* **2006**, 122 (1-4), 221-228.

30. Serebryanskiy, A.; Chou, D. Y., Comparison of solar cycle variations of solar p-mode frequencies from GONG and MDI. *ASTROPHYSICAL JOURNAL* **2005**, 633 (2), 1187-1190.

31. Chou, D. Y.; Serebryanskiy, A., In search of the solar cycle variations of p-mode frequencies generated by perturbations in the solar interior. *ASTROPHYSICAL JOURNAL* **2005**, 624 (1), 420-427.

32. Chou, D. Y.; Ladenkov, O., Evolution of solar subsurface meridional flows in the declining phase of cycle 23. *ASTROPHYSICAL JOURNAL* **2005**, 630 (2), 1206-1212.

33. Chou, D. Y.; Serebryanskiy, A.; Sun, M. T.; Team, T. O. N., Acoustic imaging and time-distance analysis of TON. In *PROCEEDINGS OF SOHO 12/GONG (PLUS) 2002 ON LOCAL AND GLOBAL HELIOSEISMOLOGY: THE PRESENT AND FUTURE*, 2003; Vol. 517, pp 53-60.

34. Chou, D. Y.; Serebryanskiy, A.; Sun, M. T., Probing solar subsurface magnetic fields. *SPACE SCIENCE REVIEWS* **2003**, 107 (1-2), 35-42.

35. Sun, M. T.; Chou, D. Y.; Ton, T., The inversion problem of phase travel time perturbations in acoustic imaging. *SOLAR PHYSICS* **2002**, 209 (1), 5-20.

36. Ladenkov, O. V.; Hill, F.; Egamberdiev, S. A.; Chou, D. Y., Acoustic power mapping for active regions from MDI, HLH, and TON data. *ASTRONOMY LETTERS-A JOURNAL OF ASTRONOMY AND SPACE ASTROPHYSICS* **2002**, 28 (6), 411-418.

37. Chou, D. Y.; Team, T. O. N., Taiwan oscillation network: Probing the solar interior. In *SPACE WEATHER STUDY USING MULTIPOINT TECHNIQUES*, 2002; Vol. 12, pp 31-37.

38. Chou, D. Y.; Serebryanskiy, A., Searching for the signature of the magnetic fields at the base of the solar convection zone with solar cycle variations of p-mode travel time. *ASTROPHYSICAL JOURNAL* **2002**, 578 (2), L157-L160.
39. Raju, K. P.; Singh, J.; Srikanth, R.; Chou, D. Y.; Team, T. O. N., Possible evidence of long-term oscillations in the solar atmosphere. *SOLAR PHYSICS* **2001**, 199 (1), 1-11.
40. Chou, D. Y.; Sun, M. T.; Team, T. O. N., Phase shifts of acoustic imaging and the subsurface structure of active regions. In *PROCEEDINGS OF THE SOHO 10/GONG 2000 WORKSHOP ON HELIO- AND ASTEROSEISMOLOGY AT THE DAWN OF THE MILLENNIUM*, 2001; Vol. 464, pp 157-162.
41. Chou, D. Y.; Sun, M. T., Kernels of acoustic imaging. In *PROCEEDINGS OF THE SOHO 10/GONG 2000 WORKSHOP ON HELIO- AND ASTEROSEISMOLOGY AT THE DAWN OF THE MILLENNIUM*, 2001; Vol. 464, pp 195-198.
42. Chou, D. Y.; Serebryanskiy, A.; Ye, Y. J.; Dai, D. C.; Khalikov, S., Lifetimes of high-l solar p-modes from time-distance analysis. *ASTROPHYSICAL JOURNAL* **2001**, 554 (2), L229-L231.
43. Chou, D. Y.; Dai, D. C., Solar cycle variations of subsurface meridional flows in the Sun. *ASTROPHYSICAL JOURNAL* **2001**, 559 (2), L175-L178.
44. Chou, D. Y., Taiwan Oscillation Network and small-telescope research at Tsing Hua University. In *SMALL-TELESCOPE ASTRONOMY ON GLOBAL SCALES*, 2001; Vol. 246, pp 39-43.
45. Chou, D. Y.; Sun, M. T.; Chang, H. K., A study of sunspots with phase time and travel time of p-mode waves in acoustic imaging. *ASTROPHYSICAL JOURNAL* **2000**, 532 (1), 622-627.
46. Chou, D. Y.; Duvall, T. L., Phase time and envelope time in time-distance analysis and acoustic imaging. *ASTROPHYSICAL JOURNAL* **2000**, 533 (1), 568-573.
47. Chou, D. Y., Acoustic imaging of solar active regions - (Invited review). *SOLAR PHYSICS* **2000**, 192 (1-2), 241-259.
48. Chou, D. Y.; Chang, H. K.; Sun, M. T.; LaBonte, B.; Chen, H. R.; Yeh, S. J.; Team, T. O. N., Acoustic imaging in helioseismology. *ASTROPHYSICAL JOURNAL* **1999**, 514 (2), 979-988.
49. Chang, H. K.; Chou, D. Y.; team, T. O. N., Acoustic imaging and subsurface structure of solar active regions. In *THIRD ADVANCES IN SOLAR PHYSICS EUROCONFERENCE: MAGNETIC FIELDS AND OSCILLATIONS*, 1999; Vol. 184, pp 171-175.
50. Chang, H. K.; Chou, D. Y.; Sun, M. T., In search of emerging magnetic flux underneath the solar surface with acoustic imaging. *ASTROPHYSICAL JOURNAL* **1999**, 526 (1), L53-L56.

51. Patron, J.; Hernandez, I. G.; Chou, D. Y.; Team, T. O. N., Time variation of velocity flows from ring diagrams: A first approach. In *NEW EYES TO SEE INSIDE THE SUN AND STARS: PUSHING THE LIMITS OF HELIO- AND ASTEROSEISMOLOGY WITH NEW OBSERVATIONS FROM THE GROUND AND FROM SPACE*, Deubner, F. L.; ChristensenDalsgaard, J.; Kurtz, D., Eds. 1998; pp 175-176.
52. Patron, J.; Hernandez, I. G.; Chou, D. Y.; Team, T. O. N., Time evolution of horizontal subsurface flows in the Sun. *ASTROPHYSICAL JOURNAL* **1998**, *506* (1), 450-455.
53. Hernandez, I. G.; Patron, J.; Chou, D. Y.; Team, T. O. N., On the reliability of ring diagram analysis. *ASTROPHYSICAL JOURNAL* **1998**, *501* (1), 408-413.
54. Chou, D. Y.; Chang, H. K.; Chen, H. R.; LaBonte, B.; Sun, M. T.; Yeh, S. J.; Ton, T.; European Space, A.; European Space, A., Results of acoustic imaging with the TON data. In *SOHO 6/GONG 98 WORKSHOP ON STRUCTURE AND DYNAMICS OF THE INTERIOR OF THE SUN AND SUN-LIKE STARS, VOLS 1 AND 2: VOL 1: SESSIONS I-III, VOL 2: SESSIONS IV-VI*, 1998; Vol. 418, pp 597-605.
55. Chen, H. R.; Chou, D. Y.; Chang, H. K.; Sun, M. T.; Yeh, S. J.; LaBonte, B.; Tang, H. T.; Shiu, W. C.; Chen, Y. L.; Jimenez, A.; Rabello-Soares, M. C.; Ai, G. X.; Wang, G. P.; Goode, P.; Marquette, W.; Ehgamberdiev, S.; Khalikov, S.; Team, T. O. N., Probing the subsurface structure of active regions with the phase information in acoustic imaging. *ASTROPHYSICAL JOURNAL* **1998**, *501* (1), L139-L144.
56. Chang, H. K.; Chou, D. Y.; Labonte, B.; Team, T. O. N., Acoustic imaging and subsurface absorption structure of sunspots. In *NEW EYES TO SEE INSIDE THE SUN AND STARS: PUSHING THE LIMITS OF HELIO- AND ASTEROSEISMOLOGY WITH NEW OBSERVATIONS FROM THE GROUND AND FROM SPACE*, Deubner, F. L.; ChristensenDalsgaard, J.; Kurtz, D., Eds. 1998; pp 219-220.
57. Chang, H. K.; Chou, D. Y.; Chen, H. R.; LaBonte, B.; Sun, M. T.; Yeh, S. J.; Team, T. O. N.; European Space, A.; European Space, A., Subsurface acoustic images of solar active regions in different frequencies with TON data. In *SOHO 6/GONG 98 WORKSHOP ON STRUCTURE AND DYNAMICS OF THE INTERIOR OF THE SUN AND SUN-LIKE STARS, VOLS 1 AND 2: VOL 1: SESSIONS I-III, VOL 2: SESSIONS IV-VI*, 1998; Vol. 418, pp 621-624.
58. Sun, M. T.; Chou, D. Y.; Lin, C. H.; Team, T. O. N., Flow around sunspots from p-mode frequency shift measurements. *SOLAR PHYSICS* **1997**, *176* (1), 59-65.
59. Patron, J.; Hernandez, I. G.; Chou, D. Y.; Sun, M. T.; Mu, T. M.; Loudagh, S.; Bala, B.; Chou, Y. P.; Lin, C. H.; Huang, I. J.; Jimenez, A.; RabelloSoares, M. C.; Ai, G.; Wang, G. P.; Zirin, H.; Marquette, W.; Nenow, J.; Ehgamberdiev, S.; Khalikov, S., Comparison of two fitting methods for ring diagram analysis of very high l solar oscillations. *ASTROPHYSICAL JOURNAL* **1997**, *485* (2), 869-

874.

60. Chen, H. R.; Chou, D. Y., Inference of subsurface magnetic field of sunspots from absorption coefficients of p-modes in sunspots. *ASTROPHYSICAL JOURNAL* **1997**, *490* (1), 452-457.

61. Chang, H. K.; Chou, D. Y.; LaBonte, B.; Sun, M. T.; Mu, T. M.; Chen, H. R.; Loudagh, S.; Yeh, S. J.; Jimenez, A.; RabelloSoares, M. C.; Ai, G.; Wang, G. P.; Zirin, H.; Marquette, W.; Ehgamberdiev, S.; Khalikov, S., Ambient acoustic imaging in helioseismology. *NATURE* **1997**, *389* (6653), 825-827.

62. Chou, D. Y.; Chou, H. Y.; Hsieh, Y. C.; Chen, C. K., A phenomenological model for the interaction of solar p-modes with active regions. *ASTROPHYSICAL JOURNAL* **1996**, *459* (2), 792-803.

63. Chen, K. R.; Chou, D. Y.; Sun, M. T.; Huang, T. Y.; Jimenez, A.; Lai, S. P.; Mu, T. M.; Chi, P. J.; Ou, K. T.; Wang, C. C.; Lu, J. Y.; Lin, Y. C.; Chu, A. L.; Niu, C. S.; Chou, Y. P.; Chao, H.; RabelloSoares, M. C.; Ai, G. X.; Wang, G. P.; Zirin, H.; Marquette, W.; Nenow, J., Determination of the lifetime of high-l solar p-modes from the interaction of p-mode waves with sunspots. *ASTROPHYSICAL JOURNAL* **1996**, *465* (2), 985-993.

64. Fan, Y.; Braun, D. C.; Chou, D. Y., SCATTERING OF P-MODES BY SUNSPOTS .2. CALCULATIONS OF PHASE-SHIFTS FROM A PHENOMENOLOGICAL MODEL. *ASTROPHYSICAL JOURNAL* **1995**, *451* (2), 877-888.

65. Chou, D. Y.; Sun, M. T.; Huang, T. Y.; Jimenez, A.; Lai, S. P.; Chi, P. J.; Ou, K. T.; Wang, C. C.; Lu, J. Y.; Chu, A. L.; Niu, C. S.; Mu, T. M.; Chen, K. R.; Chou, Y. P.; Chao, H.; Rabellosoares, M. C.; Ai, G. X.; Wang, G. P.; Zirin, H.; Marquette, W.; Nenow, J., TAIWAN OSCILLATION NETWORK. *SOLAR PHYSICS* **1995**, *160* (2), 237-243.

66. Chou, D. Y., STRUCTURE OF EMERGING FLUX REGIONS. In *MAGNETIC AND VELOCITY FIELDS OF SOLAR ACTIVE REGIONS*, 1993; Vol. 141, pp 471-478.

67. Chou, D. Y.; Chen, C. S.; Ou, K. T.; Wang, C. C., POWER SPECTRA OF MEDIAN-SCALE AND SMALL-SCALE SOLAR CONVECTION. *ASTROPHYSICAL JOURNAL* **1992**, *396* (1), 333-339.

68. Fisher, G. H.; McClymont, A. N.; Chou, D. Y., THE STRETCHING OF MAGNETIC-FLUX TUBES IN THE CONVECTIVE OVERSHOOT REGION. *ASTROPHYSICAL JOURNAL* **1991**, *374* (2), 766-772.

69. Chou, D. Y.; Labonte, B. J.; Braun, D. C.; Duvall, T. L., POWER SPECTRA OF SOLAR CONVECTION. *ASTROPHYSICAL JOURNAL* **1991**, *372* (1), 314-320.

70. Chou, D. Y.; Fisher, G. H., DYNAMICS OF ANCHORED FLUX TUBES IN THE CONVECTION ZONE .1. DETAILS OF THE MODEL. *ASTROPHYSICAL JOURNAL* **1989**, *341* (1), 533-548.

