COMPLETE LIST OF PUBLICATIONS
OF
ARNAB RAI CHOUDHURI

Publications (Book) :

*The Physics of Fluids and Plasmas: An Introduction for Astrophysicists*
Arnab Rai Choudhuri (1998)
Cambridge University Press.

Publications (Edited book) :

*IAU Colloquium 179. Cyclical Evolution of Solar Magnetic Fields: Advances in Theory and Observations*
Eds.: P. Venkatakrishnan, Oddbjorn Engvold and Arnab Rai Choudhuri (2000)

Publications (Papers) :

1. “The effect of closed boundary conditions on a stationary dynamo”
   A. R. Choudhuri (1984)

2. “Force-free equilibria of magnetized jets”
   A. Königl and A. R. Choudhuri (1985)
   [“Erratum” in *Astrophysical Journal* 305, p. 954.]

3. “A model of the polarization position-angle swings in BL Lacertae objects”
   A. Königl and A. R. Choudhuri (1985)

4. “Practising Western science outside the West: Personal observations on the Indian scene”
   A. R. Choudhuri (1985)
   *Social Studies of Science* 15, pp. 475–505.

5. “The dynamics of magnetically trapped fluids. I. Implications for umbral dots and penumbral grains”
   A. R. Choudhuri (1986)

6. “Magnetic energy dissipation in force-free jets”
   A. R. Choudhuri and A. Königl (1986)
7. “Magnetic helicity as a constraint on coronal dissipation”
   A. R. Choudhuri (1986)

8. “The influence of the Coriolis force on flux tubes rising through the solar convection zone”
   A. R. Choudhuri and P. A. Gilman (1987)

9. “Theoretical modelling of the fine structures in sunspots”
   A. R. Choudhuri (1987)

10. “On the coalescence of twisted flux tubes”
    A. R. Choudhuri (1988)

11. “The possible role of meridional flows in suppressing magnetic buoyancy”
    A. A. van Ballegooijen and A. R. Choudhuri (1988)

12. “The evolution of loop structures in flux rings within the solar convection zone”
    A. R. Choudhuri (1989)

13. “Locating the seat of the solar dynamo”
    A. R. Choudhuri (1990)

14. “Effect of turbulence on emerging flux tubes in the convection zone”
    S. D’Silva and A. R. Choudhuri (1990)

15. “On the possibility of an $\alpha^2\omega$-type dynamo in a thin layer inside the Sun”
    A. R. Choudhuri (1990)

16. “A correction to Spruit’s equation for the dynamics of thin flux tubes”
    A. R. Choudhuri (1990)
    Astronomy and Astrophysics 239, pp. 335–339.

17. “Influence of turbulence on rising flux tubes in solar convection zone”
    A. R. Choudhuri and S. D’Silva (1990)

18. “The effect of Kelvin–Helmholtz instability on rising flux tubes in the convection zone”
    S. D’Silva and A. R. Choudhuri (1991)
19. “Stochastic fluctuations of the solar dynamo”
   A. R. Choudhuri (1992)

20. “The cluster model of sunspots”
   A. R. Choudhuri (1992)

21. “Implications of rapid footpoint motions of photospheric flux tubes for coronal heating”

22. “A theoretical model for the tilts of bipolar magnetic regions”
   S. D’Silva and A. R. Choudhuri (1993)

23. “Energy transport to the solar corona by magnetic kink waves”

24. “The evolution of the Sun’s poloidal field”
   M. Dikpati and A. R. Choudhuri (1994)

25. “Magnetohydrodynamic modelling of some aspects of the solar cycle”
   A. R. Choudhuri (1995)
   *Journal of Indian Institute of Science* **75** (Special Issue on Fluid Mechanics. Guest Editor: R. Narasimha), pp. 559–575.

26. “On the large-scale diffuse magnetic field of the Sun”
   M. Dikpati and A. R. Choudhuri (1995)

27. “The solar dynamo with meridional circulation”

28. “Magnetic fields in the Sun’s interior: What do we know about them?”
   A. R. Choudhuri (1996)

29. “The evolution of the magnetic structure of the solar corona with the solar cycle”
   M. Dikpati, A. R. Choudhuri and P. Venkatakrishnan (1996)
30. “On the out of phase appearance of large-scale diffuse magnetic field of the Sun with respect to sunspots”
   M. Dikpati and A. R. Choudhuri (1996)

31. “The crisis of science” (Translation of a Bengali article by S. N. Bose)
   A. R. Choudhuri (1996)

   A. R. Choudhuri (1998)
   Current Science 74, p. 478.

33. “On the large-scale diffuse magnetic field of the Sun. II. The contribution of active regions”
   A. R. Choudhuri and M. Dikpati (1999)
   Solar Physics 184, pp. 61–76.

34. “The solar dynamo”
   A. R. Choudhuri (1999)

35. “The current status of kinematic solar dynamo models”
   A. R. Choudhuri (2000)

36. “The role of magnetic buoyancy in a Babcock-Leighton type solar dynamo”

37. “Towards a mean field formulation of the Babcock-Leighton type solar dynamo. I. α-coefficient versus Durney’s double ring approach”
   D. Nandy and A. R. Choudhuri (2001)

38. “The orientational relaxation of bipolar active regions”
   D. Longcope and A. R. Choudhuri (2002)

   A. R. Choudhuri (2002)
   Current Science 83, p. 899.

40. “Diamagnetic screening of the magnetic field in accreting neutron stars”
41. “Explaining the latitudinal distribution of sunspots with deep meridional flow”
   Science 296, pp. 1671–1673.

42. “The solar dynamo as a model of the solar cycle”
   Chapter 6 of the book The Dynamic Sun (ed: B. N. Dwivedi) (Cambridge University

43. “Solar dynamo models with realistic internal rotation”
   In SOLMAG 2002: Proceedings of the Magnetic Coupling of the Solar Atmosphere (IAU
   Colloquium 182), pp. 91–94.

44. “On the relation between mean field dynamo theory and flux tubes”

45. “Insights on turbulent flows in the solar interior from the behaviour of dynamo generated
   magnetic fields”
   In Proceedings of NATO Workshop on Turbulence (Publications of the Astronomy De-

46. “Why do millisecond pulsars have weaker magnetic fields compared to ordinary pulsars?”
   Current Science 86, pp. 444–446.

47. “Diamagnetic screening of the magnetic field in accreting neutron stars. II The effect of
   time-dependent velocity field”

48. “Full-sphere simulations of a circulation-dominated solar dynamo: Exploring the parity
   issue”
   Astronomy and Astrophysics 427, pp. 1019–1030.

49. “Helicity of solar active regions from a dynamo model”

50. “The origin of helicity in solar active regions”
   A. R. Choudhuri, P. Chatterjee and D. Nandy (2005)
   In Multi-Wavelength Investigations of Solar Activity (IAU Symposium 223) (eds.: A. V.

51. “Reply to the comments of Dikpati et al.”
   A. R. Choudhuri, D. Nandy and P. Chatterjee (2005)
52. “The user’s guide to the solar dynamo code Surya”  
   A. R. Choudhuri (2005)  
   Available upon request.

53. “Development of twist in an emerging magnetic flux tube by poloidal field accretion”  
   P. Chatterjee, A. R. Choudhuri and K. Petrovay (2006)  

54. “Some recent developments in solar dynamo theory”  
   A. R. Choudhuri (2006)  
   *Journal of Astrophysics and Astronomy* 27, pp. 79–85.

55. “The magnetic coupling between the two hemispheres of the Sun”  
   P. Chatterjee and A. R. Choudhuri (2006)  

56. “An elementary introduction to solar dynamo theory”  
   A. R. Choudhuri (2007)  

57. “Predicting solar cycle 24 with a solar dynamo model”  
   A. R. Choudhuri, P. Chatterjee and J. Jiang (2007)  

58. “A new explanation for the origin of trans-equatorial loops based on a dynamo model”  

59. “Solar activity forecast with a dynamo model”  
   J. Jiang, P. Chatterjee and A. R. Choudhuri (2007)  

60. “How far are we from a Standard Model of the solar dynamo?”  
   A. R. Choudhuri (2008)  
   *Advances in Space Research* (in press).

61. “A theoretical model for the magnetic helicity of solar active regions”  
   *Advances in Space Research* (in press).