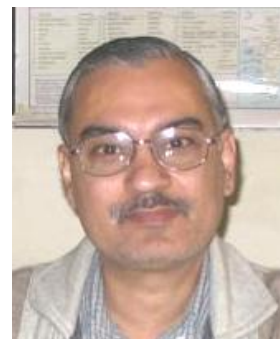


BIO-DATA OF C. P. KUMAR

Name : C. P. Kumar

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National Institute of Hydrology
Jal Vigyan Bhawan
Roorkee – 247667 (Uttarakhand)
INDIA



Web Site : <http://www.angelfire.com/nh/cpkumar/>

Education : B.Sc.Engg.(Civil), M.E.(Hydraulic Engg.)

Work Experience : 24 Years (w.e.f. 17.4.1985)

National Institute of Hydrology, Roorkee

- S.R.A. - 17.04.1985 to 21.11.1985
- Scientist 'B' - 22.11.1985 to 18.08.1991
- Scientist 'C' - 19.08.1991 to 18.08.1997
- Scientist 'E1' - 19.08.1997 to 01.07.2009
- Scientist 'F' - 02.07.2009 till date

Research Areas of Interest

1. Assessment of Groundwater Potential
2. Saline Water Intrusion in Coastal Aquifers
3. Numerical Modelling of Unsaturated Flow, Groundwater Flow and Contaminant Transport
4. Management of Aquifer Recharge
5. Application of Hydrological Models

Technical Reports Published : 31

Technical Papers Published : 73

Technical Studies

(a) ***Ground Water Assessment***

- Ground Water Balance of Upper Ganga Canal Command Area
- Ground Water Balance of Jamnagar District (Gujarat)
- Estimation of Irrigation Return Flow

(b) ***Modelling of Unsaturated Flow***

(i) Laboratory and Field Determination of Soil Moisture Characteristics

- RD 838 of Indira Gandhi Nahar Pariyojana, Stage-II
- Upper Part of Hindon River Catchment
- Malaprabha and Ghataprabha Basins

(ii) Modelling of Soil Moisture Movement

- Development of a Numerical Simulation Model for One-Dimensional Infiltration
- Prediction of Evaporation Losses from Shallow Water Table
- Evaporation from Layered Soils in the Presence of a Water Table
- Estimation of Ground Water Recharge due to Rainfall
- Effect of Water Table Depth on Recharge due to Rainfall

(c) ***Modelling of Sea Water Intrusion***

Simulation of Sea Water Intrusion and Tidal Influence

- Nauru Island (Central Pacific Ocean)
- Ernakulam Coast
- Goa Coast

(d) ***Modelling of Ground Water Flow and Solute Transport***

- Common Ground Water Modelling Errors
- Modeling of Solute Transport in Agricultural Fields
- Simulation of Solute Transport in Saline Areas of Ghataprabha Command

(e) ***Application of Hydrological Models***

- Application of SHE Model to Narmada (upto Manot) Basin
- Application of SHE Model to Hemavati (upto Sakleshpur) Basin
- Simulation of Soil Moisture Movement in Barchi Watershed using SWIM Model

Association in Consultancy Projects : 5

1. Hydrostatic Pressure Imbalance Study for Kayamkulam Gas Power Project, Kerala (sponsored by NTPC Limited, New Delhi)
2. Assessment of Impact of Irrigation Application in a part of IGNP Stage-II Command Area underlain by Hydrologic Barrier (sponsored by Command Area Development, IGNP, Bikaner)
3. Evaluating the Impact of Forest Rehabilitation Strategies (UNESCO Project)
4. Estimation of Irrigation Return Flow in Lokapavani Area in Krishnarajasagar Command (Hydrology Project)
5. Hydrological and Hydrogeological Investigations to Assess Causes of Seepage from the Reservoir of Jaswant Sagar Dam in Jodhpur (Water Resources Department, Rajasthan)

Books / Chapters Written : 5

1. Chapter on "*Ground Water Modelling*" by C. P. Kumar

In. Hydrological Developments in India Since Independence", A Contribution to Hydrological Sciences, National Institute of Hydrology, Roorkee, 1992, pp. 235-261.
2. Self-instructional Course Material on "*Surface Water and Ground Water Resources*" by C. P. Kumar and Rakesh Kumar

School of Engineering & Technology, Indira Gandhi National Open University (IGNOU).
3. "*Comprehensive Hydrological Studies of Narmada Basin - Summary of the Studies, Conclusions and Recommendations*" by Rakesh Kumar and C. P. Kumar

National Institute of Hydrology, Roorkee, 1999, 133 p.
4. Chapter on "*Groundwater Flow Models: An Overview*" by C. P. Kumar

In. Groundwater Modelling and Management (Eds. N. C. Ghosh & K. D. Sharma), Capital Publishing Company, New Delhi, 2006, pp. 153-178.
5. Chapter on "*Management of Groundwater in Salt Water Ingress Coastal Aquifers*" by C. P. Kumar

In. Groundwater Modelling and Management (Eds. N. C. Ghosh & K. D. Sharma), Capital Publishing Company, New Delhi, 2006, pp. 540-560.

M.E. Dissertation Guided : 4

1. *Prediction of One Dimensional Solute Movement in Unsaturated Medium*
(Mr. Abdhesh Kumar Upadhyay, M.Tech., Applied Geophysics, 1995, University of Roorkee)
2. *Simulation of Sea Water Intrusion for Cochin Coast (Ernakulam District)*
(Miss Deepanjali D. Bhosale, M.Tech., Environmental Engineering, 1999-2000, K.L.E. Society's College of Engineering and Technology, Belgaum)
3. *Utilisation of Saturated-Unsaturated Transport (SUTRA) Model for Goa Coast*
(Miss Mayuree N. Natu, M.Tech., Environmental Engineering, 1999-2000, K.L.E. Society's College of Engineering and Technology, Belgaum)
4. *Modelling of Soil Moisture Movement and Solute Transport in an Agricultural Field using SWIM*
(Miss Shilpa S. Ratnoji, M.Tech., Environmental Engineering, 2000-2001, K.L.E. Society's College of Engineering and Technology, Belgaum)

Training Courses / Workshops Organised : 3

1. Training Course on "*Software for Ground Water Data Management*" at NIH, Roorkee during the period 7-18 October, 1996.
2. Workshop on "*Modelling of Hydrologic Systems*" at Hard Rock Regional Centre, NIH, Belgaum during the period 4-8 September, 2000.
3. Workshop on "*Remote Sensing and GIS Applications in Hydrology*" at Hard Rock Regional Centre, NIH, Belgaum during the period 23-25 September, 2002.

Foreign Visits / Trainings Received : 2

S.No.	Country	Period	Institute	Topic
1	Denmark	9 August to 8 December, 1989	Danish Hydraulic Institute, Horsholm	Hydrological Computerized Modelling System (SHE)
2	Australia	1 January to 30 April, 1998	National Tidal Facility, Adelaide	The Modelling of Salt Water Intrusion

Awards : 2

1. Mr. C. P. Kumar was awarded **The Certificate of Merit** for 1996-97 by The Institution of Engineers (India) for his paper entitled "*Prediction of Evaporation Losses from Shallow Water Table using a Numerical Model*".
2. Mr. C. P. Kumar and Mr. Manohar Arora were awarded **The Certificate of Merit** by The Institution of Engineers (India) for their paper entitled "*Modelling of Soil Moisture Movement*" published in the Journal of the Institution (Twenty-first day of December, 2000).

Internet Hydrology

Creation and monitoring of the following websites and e-mail discussion groups:

1. **Kumar Links to Hydrology Resources**
<http://www.angelfire.com/nh/cpkumar/hydrology.html>
2. **Hydrology Forum**
<http://groups.yahoo.com/group/hydforum/>
3. **Hydrological Modelling Discussion Group**
<http://in.groups.yahoo.com/group/hydrologymodel/>
4. **Ground Water Modelling Discussion Group**
<http://groups.yahoo.com/group/gwmodel/>

Fellow/Member of Professional Associations : 9

- | | | | |
|----|--|---|---------------|
| 1. | The Institution of Engineers (India) | : | F-016636/3 |
| 2. | Indian Association of Hydrologists | : | FM-191 |
| 3. | Indian Water Resources Society | : | F-2001-1106 |
| 4. | Association of Hydrologists of India | : | AHI-LM-51-333 |
| 5. | The Indian Society for Hydraulics | : | F-19 |
| 6. | Indian Society of Soil Science | : | LM/K/043 |
| 7. | Indian Association of Soil & Water Conservationists: | : | LM-1177-K |
| 8. | Soil Conservation Society of India | : | LM-2152 |
| 9. | Geological Society of India | : | F-2496 |

Technical Reports Published

1. Kumar, C. P. and P. V. Seethapathi (1987), "*Assessment of Recharge from Various Sources to an Aquifer and Assessment of Aquifer Yield*", Technical Report No. TR-18 (Secret/Restricted), 1986-87, National Institute of Hydrology, Roorkee.

2. Kumar, C. P. and P. V. Seethapathi (1988), "*Effect of Additional Surface Irrigation Supply on Ground Water Regime in Upper Ganga Canal Command Area, Part I - Ground Water Balance*", Case Study Report No. CS-10 (Secret/Restricted), 1987-88, National Institute of Hydrology, Roorkee.
3. Kumar, C. P. (1989), "*Estimation of Evapotranspiration*", Technical Note No. TN-45, 1988-89, National Institute of Hydrology, Roorkee.
4. Kumar, C. P. (1990), "*Application of SHE Model to Narmada (upto Manot) Basin*", Case Study Report No. CS-29, 1989-90, National Institute of Hydrology, Roorkee.
5. Kumar, C. P. (1991), "*Application of SHE Model to Hemavati (upto Sakleshpur) Basin*", Case Study Report No. CS-46, 1990-91, National Institute of Hydrology, Roorkee.
6. Kumar, C. P. and G. C. Mishra (1991), "*Development of a Soil Moisture Prediction Model*", Technical Report No. TR-104, 1990-91, National Institute of Hydrology, Roorkee.
7. Kumar, C. P. (1992), "*Prediction of Evaporation Losses from Shallow Water Table using a Numerical Model*", Technical Report No. TR-119, 1991-92, National Institute of Hydrology, Roorkee.
8. Kumar, C. P. (1993), "*Estimation of Ground Water Recharge due to Rainfall by Modelling of Soil Moisture Movement*", Technical Report No. TR-142, 1992-93, National Institute of Hydrology, Roorkee.
9. Kumar, C. P. (1994), "*Soil Moisture Simulation by Improved Numerical Method*", Technical Report No. TR(BR)-111, 1993-94, National Institute of Hydrology, Roorkee.
10. Kumar, C. P. (1995), "*Ground Water Balance before Introduction of Irrigation in the Canal Command Area*", Technical Report No. TR(BR)-119, 1994-95, National Institute of Hydrology, Roorkee.
11. Kumar, C. P. (1995), "*Effect of Water Table Depth on Recharge due to Rainfall*", Technical Report No. TR(BR)-120, 1994-95, National Institute of Hydrology, Roorkee.
12. Seethapathi, P. V., G. Ramaswamy, A. B. Palaniappan, C. P. Kumar and C. K. Jain (1995), "*Hydrological Studies for the Proposed Gas Based Power Project at Kayamkulam, Alleppey District, Kerala*", Sponsored by National Thermal Power Corporation Ltd., New Delhi, 76 p.
13. Kumar, C. P. (1996), "*Evaporation from Layered Soils in the Presence of a Water Table*", Technical Report No. TR(BR)-142, 1995-96, National Institute of Hydrology, Roorkee.

14. Mishra, G. C., C. P. Kumar and Vivekanand Singh (1997), "*Assessment of Irrigation Return Flow*", Technical Report No. TR(BR)-11/96-97, National Institute of Hydrology, Roorkee.
15. Kumar, C. P. (1997), "*The Problems associated with Deltas with emphasis on Salt Water Intrusion*", Status Report, UNDP Project (IND/90/003), National Institute of Hydrology, Roorkee.
16. Kumar, C. P. (1998), "*The Modelling of Salt Water Intrusion*", Training Report in the field of Deltaic Hydrology, UNDP Project (IND/90/003), National Institute of Hydrology, Roorkee.
17. Singh, Vivekanand, G. C. Mishra, Sudhir Kumar and C. P. Kumar (1998), "*Feasibility Study of Rainwater Harvesting in Semi-Arid Region*", Technical Report No. TR(BR)-6/97-98, National Institute of Hydrology, Roorkee.
18. Kumar, Rakesh and C. P. Kumar (1999), "*Comprehensive Hydrological Studies of Narmada Basin - Summary of the Studies, Conclusions and Recommendations*", National Institute of Hydrology, Roorkee, February 1999.
19. Kumar, C. P. (1999), "*Variation of Soil Moisture Characteristics in a Part of Hindon River Catchment*", Case Study Report No. CS(AR)4/98-99, 1998-99, National Institute of Hydrology, Roorkee.
20. Purandara, B. K., C. P. Kumar, B. Venkatesh and P. R. S. Rao (2000), "*Spatial Variation of Soil and Hydrological Characteristics of Selected Watersheds in Hard Rock Region*", Case Study Report No. CS/AR-5/1999-2000, National Institute of Hydrology, Roorkee.
21. Kumar, C. P. and B. K. Purandara (2001), "*Simulation of Soil Moisture Movement in a Hard Rock Watershed using SWIM Model*", Technical Report, 2000-2001, National Institute of Hydrology, Roorkee.
22. Jain, C. K., K. K. S. Bhatia, C. P. Kumar and B. K. Purandara (2001), "*Ground Water Quality in Malaprabha River Basin, Karnataka*", Technical Report, 2000-2001, National Institute of Hydrology, Roorkee.
23. Purandara, B. K., C. P. Kumar, B. Soni and N. Varadarajan (2002), "*Simulation of Solute Transport in Saline Areas of Ghataprabha Command*", Technical Report, 2001-2002, National Institute of Hydrology, Roorkee.
24. Jain, C. K., C. P. Kumar and M. K. Sharma (2002), "*Ground Water Quality in Ghataprabha Command Area, Karnataka*", Technical Report, 2001-2002, National Institute of Hydrology, Roorkee.
25. Mishra, G. C., S. K. Singh, C. P. Kumar, Sudhir Kumar and M. K. Shukla (2003), "*Final Report on Assessment of Impact of Irrigation Application in a Part of*

IGNP Stage-II Command Area underlain by Hydrologic Barrier", Sponsored by Command Area Development, Indira Gandhi Nahar Pariyojana, Bikaner, 225 p.

26. Ghosh, N. C., B. Venkatesh, Sudhir Kumar, C. P. Kumar, A. V. Shetty and B. K. Purandara (2003), "*Surface and Subsurface Data Compilation, Analyses and Lumped Water Balance of the Lokapavani Area in Krishnaraja Sagar Command*", Part I of R & D Project – Estimation of Irrigation Return Flow in Lokapavani Area of Krishnaraja Sagar Command, Karnataka.
27. Vivekanand Singh, N. C. Ghosh, Sudhir Kumar, C. P. Kumar, A. V. Shetty and B. K. Purandara (2003), "*Estimation of Irrigation Return Flow using Process Level Modelling*", Part II of R & D Project – Estimation of Irrigation Return Flow in Lokapavani Area of Krishnaraja Sagar Command, Karnataka.
28. Rathore, D. S., N. C. Ghosh, Sudhir Kumar, C. P. Kumar, A. V. Shetty and B. K. Purandara (2003), "*Distributed Modeling of the Hydrologic Systems of the Lokapavani Area in Krishnaraja Sagar Irrigation Command using MIKE SHE WM MODULE*", Part III of R & D Project – Estimation of Irrigation Return Flow in Lokapavani Area of Krishnaraja Sagar Command, Karnataka.
29. Jain, S. K., Anupma Sharma, Rakesh Kumar and C. P. Kumar (2003), "*The Global and Indian Freshwater Crisis: A Perspective*", National Institute of Hydrology, Roorkee.
30. Kumar, C. P., A. G. Chachadi, Sudhir Kumar and B. K. Purandara (2005), "*Modelling of a Coastal Aquifer using FEFLOW*", Interim Report, 2004-2005, National Institute of Hydrology, Roorkee.
31. Kumar, C. P., A. G. Chachadi, B. K. Purandara, Sudhir Kumar, N. Varadarajan and Raju Juyal (2007), "*Modelling of a Coastal Aquifer using FEFLOW*", Report No. NIH/GWD/04-07/1, 2006-2007, National Institute of Hydrology, Roorkee, 41 p.

Technical Papers Published

(a) National and International Journals

1. Kumar, C. P. and S. K. Pathak (1987), "*Triangular Side Weirs*", Journal of Irrigation and Drainage Engineering, American Society of Civil Engineers, Vol. 113, No. 1, February 1987, pp. 98-105.
2. Mishra, G. C. and C. P. Kumar (1991), "*Hydrological Forecast of Soil Moisture*", Jalvigyan Sameeksha (Hydrology Review), A Publication of Indian National Committee on Hydrology, Volume V, Number 1 & 2, June 1991, pp. 79-84.

3. Kumar, C. P. (1991), "*Application of SHE Model to Hemavati (upto Sakleshpur) Basin*", Hydrology Journal, Indian Association of Hydrologists, Roorkee, Vol. XIV, No. 4, October-December 1991, pp. 209-227.
4. Kumar, C. P. (1992), "*Ground Water Modelling*", In. Hydrological Developments in India Since Independence", A Contribution to Hydrological Sciences, National Institute of Hydrology, Roorkee, pp. 235-261.
5. Kumar, C. P. (1994), "*Review of Analytical Procedures of Unsaturated Flow*", Hydrology Journal, Indian Association of Hydrologists, Roorkee, Vol. XVII, No. 3 & 4, July-December 1994, pp. 59-71.
6. Kumar, C. P. (1995), "*Physically - Based Distributed Modelling of Narmada (upto Manot) Basin using the Systeme Hydrologique Europeen*", Journal of Indian Water Resources Society, Volume I, Number 2, 3 & 4, June, July & Oct. 1995, pp. 11-16.
7. Kumar, C. P. (1996), "*Developments in Ground Water Hydrology : An Overview*", SATI Journal of Science and Technology, Sati Vigyan and Takniki Parishad (Samrat Ashok Technological Institute), Vidisha, Volume 1, No. 1, January 1996, pp. 80-92.
8. Kumar, C. P. (1996), "*Prediction of Evaporation Losses from Shallow Water Table using a Numerical Model*", Journal of The Institution of Engineers (India), Civil Engineering Division, Volume 77, August 1996, pp. 103-107.
9. Mittal, Sanjay and Chandra Prakash Kumar (1996), "*Bhu-Jal Santulan*", Bhagirath Journal (Hindi), April-September 1996, pp. 19-24.
10. Kumar, C. P. (1996), "*Development of a Soil Moisture Prediction Model*", Journal of Applied Hydrology, Association of Hydrologists of India, Vol. IX, No. 3 & 4, July & Oct. 1996, pp. 1-15.
11. Kumar, Chandra Prakash and Neeraj Kumar Bhatnagar (1996), "*Uthle Bhu-Jal Star Se Vashpan - Ek Punarvalokan*", Bhagirath Journal (Hindi), October-December 1996, pp. 16-18.
12. Kumar, C. P. (1997), "*Estimation of Natural Ground Water Recharge*", ISH Journal of Hydraulic Engineering, Volume 3, No. 1, March 1997, pp. 61-74.
13. Kumar, C. P. (1997), "*Effect of Water Table Depth on Recharge due to Rainfall*", Journal of Indian Water Resources Society, Volume 17 (3), Number 2, April 1997, pp. 13-19.
14. Kumar, C. P. (1998), "*Determination of Hydraulic Conductivity for Sub-surface Flow Studies*", Journal of Applied Hydrology, Association of Hydrologists of India, Vol. XI, No. 1, January 1998, pp. 25-35.

15. Kumar, C. P. (1998), "A Numerical Simulation Model for One-Dimensional Infiltration", ISH Journal of Hydraulic Engineering, Volume 4, No. 1, March 1998, pp. 5-15.
16. Kumar, C. P. (1998), "Estimation of Ground Water Recharge due to Rainfall by Modelling of Soil Moisture Movement", ISH Journal of Hydraulic Engineering, Volume 4, No. 2, September 1998, pp. 55-62.
17. Kumar, C. P. (1998), "Estimation of Ground Water Recharge from Rainfall through Numerical Modelling", Journal of Applied Hydrology, Association of Hydrologists of India, Vol. XI, No. 4, October 1998, pp. 39-45.
18. Kumar, C. P. (1999), "Evaporation from Shallow Water Table through Layered Soil Profiles", ISH Journal of Hydraulic Engineering, Volume 5, No. 2, September 1999, pp. 65-75.
19. Kumar, C. P. and Manohar Arora (1999), "Mrada Ardrata ke Sthanantaran ka Prtirupan", Journal of The Institution of Engineers (India), Year 80, October 1999, pp. 9-11.
20. Kumar, C. P. and Manohar Arora (1999), "Varsha dwara Bhaumjal ka Puneh Puran", Journal of The Institution of Engineers (India), Year 80, October 1999, pp. 12-14.
21. Kumar, C. P., Manohar Arora and S. L. Srivastava (2000), "Soil Moisture Retention Characteristics in Upper Part of Hindon River Catchment", Journal of Indian Water Resources Society, Volume 20, Number 2, April 2000, pp. 76-83.
22. Kumar, C. P. (2001), "Simulation of Sea Water Intrusion and Tidal Influence", ISH Journal of Hydraulic Engineering, Volume 7, No. 1, March 2001, pp. 1-11.
23. Kumar, C. P., B. K. Purandara and B. Soni (2001), "Variation of Soil Moisture Characteristics in Malaprabha and Ghataprabha Sub-basins", Hydrology Journal, Indian Association of Hydrologists, Roorkee, Volume 24, No. 1, March 2001, pp. 27-36.
24. Jain, C. K., K. K. S. Bhatia, C. P. Kumar and B. K. Purandara (2001), "Irrigation Water Quality in Malaprabha Sub-basin, Karnataka", Indian Journal of Environmental Protection, Volume 21, No. 4, April 2001, pp. 348-354.
25. Kumar, C. P., Digamber Singh and Sanjay Mittal (2001), "Determination of Saturated Hydraulic Conductivity in Upper Part of Hindon River Catchment", Hydrology Journal, Indian Association of Hydrologists, Roorkee, Volume 24, No. 2, June 2001, pp. 55-62.
26. Kumar, C. P., Sanjay Mittal and S. L. Srivastava (2001), "Soil Moisture Retention Characteristics at RD 838 of I.G.N.P. Stage-II", Journal of Applied Hydrology,

Association of Hydrologists of India, Vol. XIV, No. 2 & 3, April & July, 2001, pp. 17-21.

27. Kumar, C. P., Vijay Kumar and Vivekanand Singh (2001), "*Soil Moisture Characteristics in Upper Part of Hindon River Catchment*", Journal of Applied Hydrology, Association of Hydrologists of India, Vol. XIV, No. 4, October 2001, pp. 1-9.
28. Kumar, C. P. (2001), "*Common Ground Water Modelling Errors and Remediation*", Journal of Indian Water Resources Society, Volume 21, Number 4, October 2001, pp. 149-156.
29. Kumar, C. P. and S. M. Seth (2001), "*Derivation of Soil Moisture Retention Characteristics from Saturated Hydraulic Conductivity*", Journal of the Indian Society of Soil Science, Volume 49, Number 4, December 2001, pp. 653-657.
30. Kumar, C. P. (2002), "*Numerical Simulation Models for Seawater Intrusion*", Journal of Indian Water Resources Society, Volume 22, Number 3, July 2002, pp. 125-130.
31. Kumar, C. P. and Shilpa S. Ratnoji (2002), "*Modeling of Solute Transport in Agricultural Fields using SWIM*", Hydrology Journal, Indian Association of Hydrologists, Roorkee, Volume 25, No. 2 & 3, September 2002, pp. 21-32.
32. Kumar, C. P. and P. V. Seethapathi (2002), "*Assessment of Natural Ground Water Recharge in Upper Ganga Canal Command Area*", Journal of Applied Hydrology, Association of Hydrologists of India, Vol. XV, No. 4, October 2002, pp. 13-20.
33. Kumar, C. P. (2003), "*Conceptualisation in Groundwater Modelling*", Journal of Applied Hydrology, Association of Hydrologists of India, Volume XVI, No. 1, January 2003, pp. 17-28.
34. Purandara, B. K. and C. P. Kumar (2003), "*Hydrologic Characteristics of Soils under Different Land Covers in Ghataprabha Basin*", Journal of The Institution of Engineers (India), Civil Engineering Division, Volume 84, May 2003, pp. 1-5.
35. Kumar, C. P. (2003), "*Estimation of Ground Water Recharge Using Soil Moisture Balance Approach*", Journal of Soil and Water Conservation, Soil Conservation Society of India, Volume 2, No. 1 & 2, June 2003, pp. 53-58.
36. Kumar, C. P. (2003), "*Pitfalls and Sensitivities in Groundwater Modelling*", Journal of The Institution of Engineers (India), Civil Engineering Division, Volume 84, August 2003, pp. 116-120.
37. Kumar, C. P. (2003), "*Basic Guidelines for Groundwater Modelling Studies*", ISH Journal of Hydraulic Engineering, Volume 9, No. 2, September 2003, pp. 11-21.

38. Jain, C. K., C. P. Kumar and M. K. Sharma (2003), "*Ground Water Quality of Ghataprabha Command Area, Karnataka*", Indian Journal of Environ. & Ecoplan., Volume 7, No. 2, pp. 251-262.
39. Jain, C. K., C. P. Kumar and M. K. Sharma (2003), "*Irrigation Water Quality of Ghataprabha Command Area, Karnataka*", Indian Journal of Environ. & Ecoplan., Volume 7, No. 2, pp. 409-420.
40. Kumar, C. P. and B. K. Purandara (2003), "*Modelling of Soil Moisture Movement in a Watershed using SWIM*", Journal of The Institution of Engineers (India), Agricultural Engineering Division, Volume 84, December 2003, pp. 47-51.
41. Kumar, C. P. (2004), "*Hydrology Discussion Groups on Internet*", Special Article, Hydrology Journal, Indian Association of Hydrologists, Roorkee, Volume 27, Number 1-2, March-June 2004, pp. 117-120.
42. Kumar, C. P. (2004), "*Constraints in the Numerical Modelling of Salt Water Intrusion*", Journal of Soil and Water Conservation, Soil Conservation Society of India, Volume 3, No. 3 & 4, December 2004, pp. 185-195.
43. Purandara, B. K., N. Varadarajan and C. P. Kumar (2004), "*Application of Chemical Mass Balance to Water Quality Data of Malaprabha River*", Journal of Spatial Hydrology, Vol. 4, No. 2, Fall 2004.
44. Purandara, B. K., N. Varadarajan and C. P. Kumar (2005), "*Modelling of Soil Moisture Movement and Solute Transport in an Agriculture Field – A Case Study*", Journal of the Indian Society of Soil Science, Volume 53, Number 1, March 2005, pp. 41-45.
45. Kumar, C. P. (2006), "*Groundwater Flow Models: An Overview*", In. Groundwater Modelling and Management (Eds. N. C. Ghosh & K. D. Sharma), Capital Publishing Company, New Delhi, pp. 153-178.
46. Kumar, C. P. (2006), "*Management of Groundwater in Salt Water Ingress Coastal Aquifers*", In. Groundwater Modelling and Management (Eds. N. C. Ghosh & K. D. Sharma), Capital Publishing Company, New Delhi, pp. 540-560.
47. Kumar, C. P. (2006), "*Groundwater Flow and Contaminant Transport Models: An Overview*", Journal of Applied Hydrology, Association of Hydrologists of India, Volume XIX, No. 1 & 2, January & April 2006, pp. 94-110.
48. Kumar, C. P. (2007), "*Hydrology Discussion Groups on the Net*", Water Digest, Vol. II, Issue 1, March-April 2007, pp. 89-94.
49. Kumar, C. P., A. G. Chachadi, B. K. Purandara, Sudhir Kumar and Raju Juyal (2007), "*Modelling of Seawater Intrusion in Coastal Area of North Goa*", Water Digest, Vol. II, Issue 3, September-October 2007, pp. 80-83.

50. Kumar, C. P. and Sanjay Mittal (2008), "*Soil Moisture Retention Characteristics and Hydraulic Conductivity for Different Areas in India in Selected States*", Journal of Soil and Water Conservation, Soil Conservation Society of India, Volume 7, No. 2, June 2008, pp. 41-45.

(b) National and International Conferences

1. Kumar, C. P. and Kamal (1992), "*Ground Water Balance of Jamnagar District*", Proceedings, Seminar on Ground Water Hydrology, Organised by National Institute of Hydrology, Roorkee, July 17-18, 1992, New Delhi, Vol. I, pp. 9-23.
2. Kumar, C. P. (1996), "*Assessment of Ground Water Potential*", Proceedings, All India Seminar on Small Watershed Development, Organised by Indian Association of Hydrologists, West Bengal Regional Centre, 15 February 1996, Calcutta.
3. Singh, Vivekanand, C. P. Kumar and G. C. Mishra (1998), "*Assessment of Irrigation Return Flow*", Proceedings, All India Seminar on Development of Water Resources in India during 50 Years since Independence, Organised by Indian Association of Hydrologists, West Bengal Regional Centre, June 26th 1998, Calcutta, pp. 144-161.
4. Kumar, C. P. and Manohar Arora (1998), "*Estimation of Evapotranspiration with Particular Reference to Ground Water Balance Studies*", Proceedings, Ninth National Symposium on Hydrology, Organised by Irrigation Department (Government of Punjab), 26 November 1998, Amritsar, pp. 30-38.
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