Publications

PEER REVIEWED JOURNALS

- 1. **Jain, V.,** Sonam, Singh, A., Sinha, R., Tandon, S.K. (2019) Evolution of modern river systems: an assessment of 'landscape memory' in Indian river systems. *Episodes, In Press*.
- 2. <u>Agarwal, N.,</u> Haridas, A., Khanna, N., Srivastava, P. and **Jain, V.** (2019) Study of Morphology and Degradation of Craters on the Far-side of the Moon using Chandrayaan–1 Data. *Planetary and Space Science, 167, 42-53.*
- 3. **Jain. V.,** Beyene, M., <u>Varay, L.S.,</u> Wasson, R.J., Jain, S (2019) Riverine Flood Hazard (Part A): types, processes and causative factors. <u>Proceedings of the Indian National Science Academy (PINSA). DOI: 10.16943/ptinsa/2018/49471.</u>
- Wasson, R.J., Jain, V., Katuri, A., Lahiri, S., Prakash, S., Singhvi, A.K., Varma, N., Bansal, P., Joon, C.C. (2018) Riverine Flood Hazard (Part B): Disaster Risk Reduction in India. <u>Proceedings of the Indian National Science Academy (PINSA).</u> DOI: 10.16943/ptinsa/2018/49502.
- 5. Mishra, K., Sinha, R., **Jain, V.,** Nepal, S., Uddin, K. (2018) Towards the assessment of sediment connectivity in a large Himalayan river basin. <u>Science of the Total Environment</u>, 661, 251-265.
- Dey, S., Kaushal, R.K., Sonam and Jain, V. (2019) Spatiotemporal Variability of Neotectonic Activity Along the Southern Himalayan Front: A Geomorphic Perspective. <u>Journal of Geodynamics</u>. (doi.org/10.1016/j.jog.2018.09.003)
- 7. <u>Sonam</u> and **Jain, V.** (2018) Geomorphic effectiveness of long profile shape and the role of inherent geological controls in the Himalayan Hinterland area of the Ganga River basin, India. <u>Geomorphology</u>, 304, 15-29.
- 8. <u>Sahoo, R.</u> and **Jain, V.** (Dec, 2018) Sensitivity of GIUH derived hydrological response of a river basin to the spatial resolution of DEM data. <u>Computers & Geosciences</u>, 111, 78-86.
- 9. <u>Kaushal, R.,</u> Singh, V., Mukul, M., **Jain, V.** (2017) Identification of deformation variability and active structure using geomorphic markers in Nahan Salient, NW Himalaya, India. <u>Quaternary International</u>, 462, 194-210. DOI: 10.1016/j.quaint.2017.08.015.
- Varay, L.S., Rai, S.P., Singh, S.K. and Jain, V. (2017) Estimation of glacial melt contribution through stable isotope measurement and its impact on river morphology through stream power approach in two Himalayan river basins. <u>Environmental Earth Sciences</u>. 76 (23), 809. DOI: 10.1007/s12665-017-7142-3.
- 11. <u>Varay, L. S.</u>, Sigh, S.K., **Jain, V.** (2017) Sediment generation potential from permafrost in two neighbouring Himalayan river basins: a first order geomorphic analysis using GIS. <u>Himalayan Geology</u>, 38(2), 1-10.
- 12. Sinha, R., Mohanta, H., **Jain. V.,** Tandon, S.K. (2017) Geomorphic diversity as a river management tool and its application to the Ganga River, India. <u>River Research and Applications</u>, 33(7), 1156-1176. DOI: 10.1002/rra.3154.
- Dey, S., Thiede, R., C., Schildgen, T.F., Wittmann, H., Bookhagen, B., Dirk Scherler, D., Jain, V., Strecker, M.R. (2016) Climate-driven sediment aggradation and incision since the Late Pleistocene in the NW Himalaya, India. <u>Earth and Planetary Science Letters</u>, 449, 321-331, DOI: 10.1016/j.epsl.2016.05.050.
- 14. Densmore, A., Sinha, R., Sinha, S., Tandon, S.K., **Jain, V.** (2016) Sediment storage and release from Himalayan piggyback basins and implications for downstream river morphology and evolution. *Basin Research*. DOI: 10.1111/bre.12116, 1-16.
- 15. **Jain, V.**, Sinha, R., Singh, L.P., Tandon, S.K. (2016) River systems in India: the Anthropocene context. *Proceedings of the Indian National Science Academy (PINSA)*, 82(3), 747-761, DOI: 10.16943/ptinsa/2016/48482.

- 16. Bhattacharjee, D., **Jain, V.**, Chattopadhyay, A., Biswas, R.H., Singhvi, A.K. (2016) Geomorphic evidences and chronology of multiple neotectonic events in a cratonic area: Results from the Gavilgarh Fault Zone, central India. *Tectonophysics*. 677-678, 199-217.
- 17. <u>Bawa, N.</u>, **Jain, V.** , Shekhar, S., <u>Kumar, N.</u>, <u>Jyani, V.</u> (2014) Controls on Morphological Variability and Role of Stream Power Distribution, Yamuna River, western India. *Geomorphology*, 227, 60-72. doi: 10.1016/j.geomorph.2014.05.016.
- 18. <u>Kumar, R.</u>, **Jain, V.**, G. Prasad Babu, G., Sinha, R. (2014) Connectivity structure of the Kosi Megafan and role of rail-road transport network. *Geomorphology*, 227, 73-86. doi: 10.1016/j.geomorph.2014.04.031.
- 19. Sinha, R., Sripriyanka, K., **Jain, V.**, Mukul, M. (2014) Avulsion threshold and planform dynamics of the Kosi River in north Bihar (India) and Nepal: A GIS framework. *Geomorphology*, 216, 157-170.
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- 21. Sinha, R., Jain, V., Tandon, S.K., Chakraborty, T. (2012) Large river systems of India. *Proceeding of Indian National Science Academy (PINSA)*, 78(3), 277-294.
- 22. Barnes, J. B., Densmore, A. L., Mukul, M., Sinha, R., **Jain**, **V.** and Tandon, S. K. (2011) Interplay between faulting and base level in the development of Himalayan frontal fold topography, *Journal of Geophysical Research*, 116, F03012, doi:10.1029/2010JF001841.
- 23. **Jain, V.** and Tandon, S.K. (2010) Conceptual assessment of (dis)connectivity and its application to the Ganga river dispersal system. **Geomorphology**, 118, 349-358.
- 24. Singh, T. and **Jain, V**. (2009) Tectonic constraints on watershed development on frontal ridges: Mohand Ridge, NW Himalaya, India. **Geomorphology**, 106, 231-241.
- 25. Wasson, R.J., Juyal, N., Jaiswal, M., McCulloch, M., Sarin, M.M., **Jain, V.**, Srivastava, P., Singhvi, A.K.(2008) The mountain-lowland debate: Deforestation and sediment transport in the Upper Ganga catchment. **Journal of Environment Management**, 88, 53-61.
- Jain, V., Fryirs, K., Brierley, G.(2008) Where do floodplains begin? The role of total stream power and longitudinal profile form on floodplain initiation processes, *Geological Society of America Bulletin* 120 (1/2), 127-141; doi: 10.1130/B26092.1.
- 27. Brierley, G., Fryirs, K. and **Jain, V**. (2006) Landscape connectivity: The geographic basis of geomorphic applications. *Area*, 38, 165-174.
- 28. **Jain, V.**, Preston, N., Fryirs, K. and Brierley, G. (2006) Comparative assessment of three approaches for deriving stream power plots along long profiles in the upper Hunter River catchment, New South Wales, Australia. *Geomorphology*, 74, 297-317.
- Tandon, S.K., Gibling, M.R., Singh, R., Singh, V., Ghazanfari, P., Dasgupta, A., Jain, M. and Jain, V. (2006) Alluvial valleys of the Gangetic Plains, India: causes and timing of incision. In: Incised Valleys in Time and Space (Edited by) Dalrymple, R. W., Tillman, R. W., Leckie, D. A., SEPM Special Publication no. 85, 15-35, ISBN: 1565761227, 9781565761223.
- 30. Sinha, R, **Jain, V.,** Prasad Babu, G. and Ghosh, S. (2005) Geomorphic characterization and diversity of the rivers of the Gangetic plains. *Geomorphology*, 70, 207-225.
- 31. **Jain, V.** and Sinha, R. (2005) Response of active tectonics on the alluvial Baghmati River, Himalayan foreland basin, eastern India. **Geomorphology**, 70, 339-356.
- 32. Sinha, R., Gibling, M. R., **Jain, V.** and Tandon, S. K (2005) Sedimentology and avulsion patterns of the anabranching Baghmati River in the Himalayan foreland basin, India. <u>In:</u> *Fluvial Sedimentology* (eds. Blum, M. and Marriott, S.), Special publication of the International Association of Sedimentologists, 35, 181-196.

- 33. Sinha, R., Gibling, R., Tandon, S. K., **Jain, V.** and Dasgupta, A. S.,(2005) Quaternary stratigraphy and sedimentology of the Kotra section on the Betwa River, southern Gangetic plains, Uttar Pradesh. **Journal of the Geological Society of India**, 65, 441-450.
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- 36. **Jain, V.** and Sinha, R. (2003) Derivation of Unit Hydrograph and 50-yr flood from GIUH analysis for the Himalayan river. **Water Resources Management** 7, 355-375.
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- 38. **Jain, V.** and Sinha, R. (2003) Hyperavulsive-anabranching Baghmati river system, north Bihar plains, eastern India. **Zeitschrift fur Geomorphologie**, 47(1), 101-116.
- 39. **Jain, V.** and Sinha, R. (2003) Geomorphological manifestation of the flood hazard. **Geocarto** *International*. 18 (4), 51-60.
- 40. **Jain, V.** and Sinha, R (2003) Data requirement for geomorphological studies of rivers and their significance. **Journal of Applied Hydrology**, XVI (2), 18-42.
- 41. Sinha, R., Khanna, M., **Jain, V.** and Tandon, S.K. (2002) Mega-geomorphology and sedimentation history of parts of the Ganga-Yamuna plains. *Current Science*, 82 (5), 101-106.
- 42. Sinha, R. and **Jain, V.** (1998) Flood hazards of north Bihar rivers, Indo-Gangetic Plains. <u>In:</u> Kale, V.S. (ed.) *Flood studies in India*; Geological Society of India, Memoir 41, 27-52.

BOOK CHAPTERS

- Jain, V., <u>Guha, S., Varay, L.S.</u> (2018) River response to climate change: Geomorphic approach to understand past responses and river's future. In: Climate Change and Water Resources in India (Eds. Mishra, V. and Bhatt, J.R.), Ministry of Environment, Forest & Climate Change, ISBN: 978-81-933131-6-9.
- Sinha, R., Jain, V., Gaurav, K. (2018) Geomorphic changes and sediment dynamics in Rivers: Causes and Consequences. In: Water Futures in India: Status of Science and Technology (Ed. Mujumdar, P.P. and Tiwari, V.), Indian National Science Academy (INSA), IISc Press, pp. 401-450.
- 3. **Jain, V.**, Kumar, R., Kaushal, R., Gautam, T., Singh, S.K. (2018) The Dynamic Kosi River and its tributaries. In: *Indian Rivers: An introduction for Science and Society* (Ed. Singh, D.S.). Springer. Pp. 221-238. ISBN: 978-981-10-2983-7.
- 4. Prasad, R., Prabhakar, V.N., **Jain, V.** (2017) Geological Aspects of Raw Materials for Stone Beads. <u>In: Stone beads of south and southeast Asia (Ed. Kanungo, A.K.)</u> Aryan Books International. ISBN No. 7988173055478, pp. 115-126.
- Sinha, R., Jain, V., Tandon, S.K., (2012) River Systems and River Science in India: major drivers and challenges. In: <u>Earth System Processes and Disaster Management</u>. (Eds. Sinha, R. Ravindra, R.) Springer-Verlag Publications, pp. 67-90.
- 6. Sinha, R. and **Jain, V.** (2002) Quaternary geomorphology of the upper and middle Ganga plains: A review. <u>In: Recent Advances in Geomorphology, Quaternary Geology and Environmental Geosciences: Indian Case Studies (Eds. Tandon, S.K. and Thakur, B.), Manisha Publications, New Delhi, pp. 117-142.</u>

SEMINAR PROCEEDINGS

- 1. Jain, V. (2010) Process based understanding of fluvial systems in Bihar plains and applications in fluvial hazard management. <u>Proceeding of DST Workshop on 'Geology and Metallogeny of Bihar and Jharkhand States'</u>, <u>Hazaribagh</u>, <u>Jharkhand</u>.
- Sinha, R. and Jain, V. (2004) Aggradation-degradation in Gangetic river systems: A process-response framework; <u>Seminar on Silting of Rivers: Problems and solutions</u>, Ministry of Water Resources, New Delhi, India, pp. 1-11.
- 3. Singhvi, A.K., Jaiswal, M., Juyal, N. and **Jain, V.** (2004) Luminescence dating studies at the Physical Research Laboratory; *Proc. of International Conference on Luminescence and its Applications*, BARC Mumbai, India, pp. 73-75.
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- 5. Anbalagan, R., Srivastava, N.C.N. and **Jain, V.** (2000) Slope stability studies of Vyasi Dam reservoir area, Garhwal Himalaya, U.P., India; <u>Proc. of 8th International Symposium on Landslides</u>, Cardiff, UK, pp. 1-6.

ORAL AND POSTER PRESENTATIONS AT CONFERENCES

- Shukla, T. and Jain, V. (2018) Sediment budgeting as a tool for sustainable sediment mining, case study from a bedrock river in Peninsular India. AGU 2018 Fall Meeting. 10-14 Dec., Washington, D.C. (Tanya Shukla received 2018 AGU Fall Meeting Berkner Travel Fellowship full funding to support to present her work in the AGU Fall meeting)
- 2. <u>Kaushal, R.K.,</u> Mukul, M., Singh, V., Jaiswal, M., Nair, A.S., Singh, A., **Jain, V.** (2018) Increased late Holocene shortening across the segmented Main Frontal Thrust in Nahan salient, northwest Sub- Himalaya. AGU 2018 Fall Meeting. 10-14 Dec., Washington, D.C. (Rahul Kaushal received partial travel grant from AGU to attend this meeting)
- 3. <u>Kaushal, R.K., Kumar, V.,</u> **Jain, V.** (2018) Incorporation of Slope and Rainfall Variability in Channel Network Extraction from Digital Elevation Model. AGU 2018 Fall Meeting. 10-14 Dec., Washington, D.C.
- Guha, S., Dey, S., Jain, V. (2018) Lithological and structural control on landscape evolution in the western Ghat in Peninsular. AGU 2018 Fall Meeting. 10-14 Dec., Washington, D.C. (Shantamoy Guha received partial travel grant from AGU to attend this meeting)
- 5. Borogohain, B., Salvi, D., Mathew, G., Singhvi, A.K. and **Jain, V.** (2018) Detrital thermochronology and hydrodynamic modeling of the Late Quaternary megafloods in the Siang Valley, NE Himalaya. 16th International Conference on Thermochronology (Thermo 2018), 16-21 September 2018 · Palais Salfeldt · Quedlinburg (Germany).
- 6. Shukla, T., Sonam and Jain, V. (2018) Spatial variability in channel processes and its applications for river management, in 6th International Symposium on Advances in Civil and Environmental Engineering Practices, for Sustainable Development (ACEPS-2018), Galle, SL, Mar. 15, 2018.
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- 15. Ramendra Sahoo and **Jain**, **V.** (2017) Inferring tectonic activity using drainage network and RT model: an example from the western Himalayas, **India**. *European Geosciences Union* (*EGU*) *General Assembly*. *Vienna*, *Austria*. *April* 2017.
- Jain, V., Shekhar, S., <u>Chakraborty, NB (2017)</u> Challenges in the geomorphic management of a river system in response to urbanisation expansion around a mega city: Case study from Yamuna River around Delhi NCR. <u>International Symposium on Sustainable Urban Environment (ISSUE 2017)</u>. Tezpur University, Assam, June, 2017
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- 25. Varay, L.S., Rai, S.P., Singh, S.K. and Jain, V. (2015) Stable isotopic characterization of water samples from north- west Himalayan river basins and implications on glacio-fluvial

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- 29. Sinha, R., Mozumder, C., **Jain, V.** (2013) Geomorphic considerations for environmental flow and habitat suitability in the Ganga river system, India. <u>8th Conference of International Association of Geomorphologists</u>, <u>Paris.</u>
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- 35. <u>Varay, L.S.</u> and **Jain, V.**, 2012. Complex scenario of fluvial geomorphologic responses to glacial melting: A first order synthesis for the Himalayan rivers. <u>Tropical Rivers, IGCP 482, Annual meeting and Conference on Tropical Rivers: Hydro-Physical Processes, Impacts, Hazards and Management, IIT Kanpur, pp. 49.</u>
- 36. <u>Bawa, N., Jyani, V., Tyagi, P., Jain, V.</u>, Shekhar, S. 2012. Morphological variability in the Yamuna River system and role of stream power distribution pattern. <u>Tropical Rivers, IGCP 482, Annual meeting and Conference on Tropical Rivers:Hydro-Physical Processes, Impacts, Hazards and Management</u>, IIT Kanpur, pp. 12. (IIIrd Best Poster Award)
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- 39. Jain, V. (2011) Role of geoinformatics in river basin management. <u>IGCP, Delhi Tropical Rivers, IGCP 482, Tropical Rivers: Hydro-Physical Processes, Impacts, Hazards and Management</u>, GSI Delhi.
- Jain, V. (2011) Tracking geomorphic change at cross-over of scales through quantification of driving force in fluvial systems. <u>Earth Science Goals. Goals for Earth Sciences in the Current Decade (2011-2020)</u>. Centre for Earth and Space Sciences, University of Hyderabad and Geological Society of India. pp. 23.
- 41. **Jain, V.** (2011) Glacial melting, differential river response and rivers future in the Ganga Plains. *Fourth annual Indo-American Kavli Frontiers of Science symposium in Irvine, California, USA*.
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- 43. <u>Bawa, N., Tyagi, P.</u> and **Jain, V.** (2011) Spatial variability in channel morphology and role of bar connectivity in the Yamuna river from Panipat to Delhi region. <u>National seminar on Modern and Palaeo Sediments: Implication to Climate, Water Resources and Environmental Changes and XXVIII Convention of Indian Association, J.N.U., Delhi, pp. 74.</u>
- 44. <u>Tyagi, P., Gautam, T., Jain, V.</u> (2011) Stream power distribution and its association with landscape pattern in the Yamuna River basin. <u>National seminar on Modern and Palaeo Sediments: Implication to Climate, Water Resources and Environmental Changes and XXVIII Convention of Indian Association, J.N.U., Delhi, pp. 71. (IIIrd Best Poster Award)</u>
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- 46. <u>Jyani, V., Sathish, S., Jain, V.</u> and Shekhar, S. (2011) Geomorphic mapping in the Yamuna valley and its application in stream management. <u>National seminar on Modern and Palaeo Sediments: Implication to Climate, Water Resources and Environmental Changes and XXVIII Convention of Indian Association</u>, J.N.U., Delhi, pp. 72.
- 47. <u>Mahajan, A.,</u> Singh, V., **Jain, V.**, 2011. River response to active tectonic activity in Nahan salient using stream length gradient index, <u>International Conference on Indian Monsoon and Himalayan Geodynamics</u>, Wadia Institute of Himalayan Geology, Dehradun. (**IInd Best Poster Award**)
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(Name of students and postdocs who worked under my guidance has been underlined)