

Publications

A. List of Publications in International (SCI) Journals

- [1] **H. Kar** and V. Singh, "Stability analysis of 2-D state-space digital filters using Lyapunov function: a caution," *IEEE Transactions on Signal Processing*, vol. 45, pp. 2620-2621, Oct. 1997.
- [2] **H. Kar** and V. Singh, "A new criterion for the overflow stability of second-order digital filters using saturation arithmetic," *IEEE Transactions on Circuits and Systems I: Fundamental Theory and Applications*, vol. 45, pp. 311-313, March 1998.
- [3] **H. Kar** and V. Singh, "An improved criterion for the asymptotic stability of 2-D digital filters described by the Fornasini-Marchesini second model using saturation arithmetic," *IEEE Transactions on Circuits and Systems I: Fundamental Theory and Applications*, vol. 46, pp. 1412-1413, Nov. 1999.
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- [6] **H. Kar** and V. Singh, "Stability analysis of 1-D and 2-D fixed-point state-space digital filters using any combination of overflow and quantization nonlinearities," *IEEE Transactions on Signal Processing*, vol. 49, pp. 1097-1105, May 2001.
- [7] **H. Kar** and V. Singh, "Stability analysis of discrete-time systems in a state-space realization with partial state saturation nonlinearities," *IEE Proc.-Control Theory and Applications*, vol. 150, pp. 205-208, May 2003. (This article represents an outstanding and significant contribution to the field of control systems and has won **2002-2003 IEE Heaviside Premium Award** (U.K.)).
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- [9] **H. Kar** and V. Singh, "Erratum: Robust stability of two-dimensional uncertain discrete systems," *IEEE Transactions on Signal Processing Letters*, vol. 10, p. 250, Aug. 2003.

- [10] **H. Kar** and V. Singh, "Elimination of overflow oscillations in fixed-point state-space digital filters with saturation arithmetic: an LMI approach," *IEEE Transactions on Circuits and Systems II: Express Briefs*, vol. 51, pp. 40-42, Jan. 2004.
- [11] V. Singh, D. Chandra, and **H. Kar**, "Optimal Routh approximants through integral squared error minimization: computer-aided approach," *IEE Proceedings- Control Theory and Applications*, vol. 151, pp. 53-58, Jan. 2004.
- [12] V. Singh, D. Chandra, and **H. Kar**, "Improved Routh-Pade approximants: a computer-aided approach," *IEEE Transactions on Automatic Control*, vol. 49, pp. 292-296, Feb. 2004.
- [13] **H. Kar** and V. Singh, "Robust stability of 2-D discrete systems described by the Fornasini-Marchesini second model employing quantization/overflow nonlinearities," *IEEE Transactions on Circuits and Systems II: Express Briefs*, vol. 51, pp. 598-602, Nov. 2004.
- [14] **H. Kar** and V. Singh, "Stability analysis of 2-D digital filters with saturation arithmetic: an LMI approach," *IEEE Transactions on Signal Processing*, vol. 53, pp. 2267-2271, June 2005.
- [15] **H. Kar** and V. Singh, "Elimination of overflow oscillations in digital filters employing saturation arithmetic," *Digital Signal Processing*, vol. 15, pp. 536-544, Nov. 2005(**Listed in ScienceDirect's Top 25 Hottest Articles**).
- [16] A. Dhawan and **H. Kar**, "LMI-based criterion for the robust guaranteed cost control of 2-D systems described by the Fornasini-Marchesini second model," *Signal Processing*, vol. 87, pp. 479-488, March 2007.
- [17] **H. Kar**, "An LMI based criterion for the nonexistence of overflow oscillations in fixed-point state-space digital filters using saturation arithmetic," *Digital Signal Processing*, vol. 17, pp. 685-689, May 2007(**Listed in ScienceDirect's Top 25 Hottest Articles**).
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- [19] A. Dhawan and **H. Kar**, "Optimal guaranteed cost control of 2-D discrete uncertain systems: an LMI approach," *Signal Processing*, vol. 87, pp. 3075-3085, Dec. 2007.
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- [22] V. K. R. Kandanvli and **H. Kar**, "Robust stability of discrete-time state-delayed systems employing generalized overflow nonlinearities," *Nonlinear Analysis: Theory, Methods & Applications*, vol. 69, pp. 2780-2787, 1 Nov. 2008.
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- [33] **H. Kar**, “Asymptotic stability of fixed-point state-space digital filters with combinations of quantization and overflow nonlinearities,” *Signal Processing*, vol. 91, pp. 2667-2670, Nov. 2011.
- [34] A. Dey and **H. Kar**, “An LMI based criterion for the global asymptotic stability of 2-D discrete state-delayed systems with saturation nonlinearities,” *Digital Signal Processing*, vol. 22, pp. 633-639, July 2012.
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- [76] A. Srivastava, R. Negi, and **H. Kar**, “Guaranteed cost controller for discrete time-delayed systems with actuator saturation,” *Transactions of the Institute of Measurement and Control*, vol. 44, no. 6, pp. 1163–1177, April 2022. (Impact Factor: 2.146)
- [77] N. Agarwal and **H. Kar**, “Novel criterion for preventing overflow oscillations in fixed-point digital filters with state saturation,” *IEEE Signal Processing Letters*, vol. 29, no. 5, 1287–1291, May 2022. (Impact Factor: 3.201)
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- [82] M.K. Kumar and **H. Kar**, "New criterion for the realization of 2-D interfered digital filters described by the Fornasini–Marchesini second local state-space model," *Circuits, Systems, and Signal Processing*, vol. 42, pp. 3117–3137, May 2023. <https://doi.org/10.1007/s00034-022-02248-4>. (Impact Factor: 2.311)
- [83] A. Srivastava, R. Negi, and **H. Kar**, "Optimal guaranteed cost control of discrete-time uncertain systems subjected to state saturation nonlinearity," *Transactions of the Institute of Measurement and Control*, published online 22 June 2023. doi:10.1177/01423312231181977. (Impact Factor: 2.146)
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B. List of Publications in International (Scopus) Journals

- [87] A. Dey and **H. Kar**, "LMI-based criterion for the robust stability of 2D discrete state-delayed systems using generalized overflow nonlinearities," *Journal of Control Science and Engineering*, vol. 2011, Article ID 271515, 12 pages, 2011.(Also indexed in Emerging Sources Citation Index, which is the New Edition of the Web of Science)
- [88] A. Dey and **H. Kar**, "LMI condition for global asymptotic stability of 2-D discrete uncertain state-delayed systems with generalized overflow nonlinearities," *The Mediterranean Journal of Measurement and Control*, vol. 8, No. 1, pp. 368-374, 2012.

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- [96] S. Singh and **H. Kar**, “Stability of 2D Lipschitz nonlinear digital filters in Fornasini–Marchesini second model with overflow arithmetic,” *Journal of Control, Automation and Electrical Systems*, vol. 34, pp. 50-59, Feb. 2023.
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C. List of Publications in other peer-reviewed International Journals

- [100] A. Dhawan and **H. Kar**, “LMI approach to suboptimal guaranteed cost control for 2-D discrete uncertain systems,” *Journal of Signal and Information Processing*, vol. 2, pp. 292-300, Nov. 2011.
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D. List of Publications in Conference Proceedings

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