发表论文（按年限排列, *通讯作者）

[1]. **F. Duan***, F. Chapeau-Blondeau, D. Abbott, Optimized injection of noise in activation functions to improve generalization of neural networks, *Chaos Solitons and Fractals*, 178: 114363, 2024

[2]. L. Duan, Y. Ren, **F. Duan***, Adaptive stochastic resonance based convolutional neural network for image classification, *Chaos Solitons and Fractals*, 162: 112429, 2022

[3]. Saiya Bai, **Fabing Duan***, Fran çois Chapeau-Blondeau, Derek Abbott, Generalization of stochastic-resonance-based threshold networks with Tikhonov regularization, *Physical Review E* 106, L012101, 2022.

[4]. Weijin Li, Yuhao Ren, and **Fabing Duan**, Hyperparameter on-line learning of stochastic resonance based threshold networks, *Chin. Phys. B* 31, 080503 (2022)

[5]. Zejia Chen, **Fabing Duan**, Francois Chapeau-Blondeau, Derek Abbott, Training threshold neural networks by extreme learning machine and adaptive stochastic resonance, *Physics Letters A* 432 (2022) 128008.

[6]. Y. Ren, Y. Pan, **F. Duan**, SNR gain enhancement in a generalized matched filter using artificial optimal noise, *Chaos, Solitons and Fractals*, 155: 111741, 2022.

[7]. L. Duan, **F. Duan***, F. Chapeau-Blondeau, D. Abbott, Noise-boosted backpropagation learning of feedforward threshold neural networks for function approximation, *IEEE Transactions on Instrumentation and Measurement*, vol. 70, Art. no. 3121502, 2021.

[8]. J. Liu, **F. Duan***, F. Chapeau-Blondeau, D. Abbott, Distributed Bayesian vector estimation using noise-optimized low-resolution sensor observations, *Digital Signal Processing*, 118, 103224, 2021.

[9]. Fei Li, **Fabing Duan***, Fran çois Chapeau-Blondeau, Derek Abbott, Signal estimation and filtering from quantized observations via adaptive stochastic resonance, *Physical Review E* 103, 052108 (2021).

[10]. X. Liu, L. Duan, **F. Duan***, F. Chapeau-Blondeau, D. Abbott, Enhancing threshold neural network via suprathreshold stochastic resonance for pattern classification, *Physics Letters A* 403 (2021) 127387.

[11]. Y. Pan, **F. Duan***, F. Chapeau-Blondeau, L. Xu, D. Abbott, Study of vibrational resonance in nonlinear signal processing，*Philosophical Transactions of the Royal Society A* ,379: 20200235, 2021.

[12]. **F. Duan***, L. Duan, F. Chapeau-Blondeau, Y. Ren, D. Abbott, Binary signal transmission in nonlinear sensors: stochastic resonance and human hand balance, *IEEE Instrumentation & Measurement Magazine*, 23(1):44-49, Feb. 2020.

[13]. J. Liu, **F. Duan***, F. Chapeau-Blondeau, D. Abbott, Exploring *bona fide* optimal noise for Bayesian parameter estimation, *IEEE Access*, 8:18822-18831, 2020.

[14]. L. Duan, **F. Duan***, F. Chapeau-Blondeau, D. Abbott, Stochastic resonance in Hopfield neural networks for transmitting binary signals, *Physics Letters A*, 384: 126143, 2020.

[15]. Y. Pan，**F. Duan***, L. Xu, F. Chapeau-Blondeau, Benefits of noise in M-estimators: Optimal noise level and probability density, *Physica A* 534: 120835, 2019.

[16]. **F. Duan***, Y. Pan，F. Chapeau-Blondeau, D. Abbott, Noise Benefits in Combined Nonlinear Bayesian Estimators，*IEEE Tranctionss on Signal Processing*, 67(17): 4611-4623, 2019.

[17]. Y. Pan, Y. Ren, **F. Duan***, Noise benefits to robust M-estimation of location in dependent observations，*Physica A* 505: 144-152, 2018.

[18]. Y. Pan，**F. Duan***, F. Chapeau-Blondeau, D. Abbott, Noise enhancement in robust estimation of location, *IEEE Transactions on Signal Processing*, 66: 1953-1966, 2018

[19]. Y. Ren, Y. Pan, **F. Duan***, Generalized energy detector for weak random signals via vibrational resonance, *Physics Letters A* , 382: 806–810, 2018.

[20]. Liyan Xu, **F. Duan***, Xiao Gao, Derek Abbott, Mark D. McDonnell. Adaptive recursive algorithm for optimal weighted suprathreshold stochastic resonance, *Royal Society Open Science*, 4: 160889, 2017.

[21]. Y. Ren, Yan Pan，**F. Duan***, F. Chapeau-Blondea, D. Abbott, Exploiting vibrational resonance in weak-signal detection, *Physical Review E* 96, 022141, 2017.

[22]. 张立，孙华通，潘园园，段法兵*，人体手部运动的振荡共振辅助系统实验研究，《复杂系统与复杂性科学》，2017, 14（4）：72-78。

[23]. **F. Duan***, F. Chapeau-Blondea, D. Abbott, Capacity of very noisy communication channels based on Fisher information, *Scientific Reports*, vol.6, art. no. 27946, 2016.

[24]. L. Xu, **F. Duan***, D. Abbott, M.D. McDonnell, Optimal weighted suprathreshold stochastic resonance with multigroup saturating sensors, *Physica A* 457 (2016) 348–355.

[25]. Y. Ren and **F. Duan***, Theoretical and experimental implementation of vibrational resonance in an array of hard limiters, *Physica A*, 456: 319–326, 2016.

[26]. X. Zhang, J. Yan, **F. Duan***, Comparison of Bistable Systems and Matched Filters in Non-Gaussian Noise, *Fluctuation and Noise Letters*, 15 (1) : no.1650003, 2016

[27]. **F. Duan***, F. Chapeau-Blondeau, D. Abbott, Encoding efficiency of suprathreshold stochastic resonance on stimulus-specific information, *Physics Letters A*, 380(1–2): 33–39, 2016.

[28]. L. Xu*, T. Vladusich, **F. Duan**, L. J. Gunn, D. Abbott, M. D. McDonnell, Decoding suprathreshold stochastic resonance with optimal weights, *Physics Letters A* ,vol. 379, 2015: 2277–2283.

[29]. 任昱昊，许丽艳，段法兵*，震荡随机共振的信噪比增益研究与电路仿真，《复杂系统与复杂性科学》，2015, 12（1）：104-109

[30]. **F. Duan***, Liyan Xu, Yuhao Ren, An informative view of suprathreshold stochastic resonance with stimulus-specific information, *International Conference on Noise and Fluctuations*, ICNF 2015/pp.7288552 2015.

[31]. **F. Duan***, F. Chapeau-Blondeau, D. Abbott, Noise-enhanced transmission efficacy of aperiodic signals in nonlinear systems, *International Journal of Modern Physics*, 33 no.1460356, 2014

[32]. **F. Duan***, F. Chapeau-Blondeau, D. Abbott, Double-maximum enhancement of signal-to-noise ratio gain via stochastic resonance and vibrational resonance, *Physical Review E* 90, 022134 2014.

[33]. Y. Ma, **F. Duan**, Comparison of stochastic resonance in static and dynamical nonlinearities, *Physics Letters A* ,vol. 378, 2014:2651–2656.

[34]. **F. Duan***, F. Chapeau-Blondeau, D. Abbott, Non-Gaussian noise benefits for coherent detection of narrowband weak signal, *Physics Letters A* ,vol. 378, 2014:1820–1824.

[35]. **F. Duan***, F. Chapeau-Blondeau, D. Abbott, Stochastic Resonance with Colored Noise for Neural Signal Detection, *PLoS ONE*, vol.9(3), no. e91345, 2014.

[36]. **F. Duan***, F. Chapeau-Blondeau, D. Abbott, Weak signal detection: condition for noise induced enhancement, *Digitial Signal Processing*, vol.23, pp. 1585-1591, 2013.

[37]. Y. Ma, **F. Duan***, F. Chapeau-Blondeau, D. Abbott, Weak-Periodic Stochastic Resonance in a Parallel Array of Static Nonlinearities, *PLoS ONE*, vol.8(3), no.~e58507, 2013.

[38]. **F. Duan***, F. Chapeau-Blondeau, D. Abbott, Exploring weak-periodic-signal stochastic resonance in locally optimal processors with a Fisher information metric, *Signal Processing*, 92 (12), 3049-3055, 2012.

[39]. **F. Duan***, F. Chapeau-Blondeau, D. Abbott, Fisher information as a metric of locally optimal processing and stochastic resonance, *PLoS ONE*, vol.7(4), no.~e34282, 2012.

1times

[40]. **F. Duan***, F. Chapeau-Blondeau, D. Abbott, Fisher-information condition for enhanced signal detection via stochastic resonance, *Physical Review E*, 84(5), 051107, 2011 2times

[41]. **F. Duan***, D. Abbott, F. Chapeau-Blondeau, Evaluation of the sign detector for DCT domain watermark detection, *Fluctuation and Noise Letters*, vol.10 (4), pp.337-358, 2011.

[42]. **F. Duan***, F. Chapeau-Blondeau, D. Abbott, Neural signal transduction aided by noise in multisynaptic excitatory and inhibitory pathways with saturation， *Physica A*, 390: 2855–2862 (2011).

[43]. **F. Duan***, Y. Wang, A nonlinear detector for optimal DCT-domain watermark detection, 1st International Conference on Electrical and Control Engineering, vol.1, pp.176-178, Wuhan，2010.

[44]. F. Chapeau-Blondeau, **F. Duan***, D. Abbott, Synaptic signal transduction aided by noise in a dynamical saturating model, *Physical Review E*, 81, art no. 021124, (2010).

[45]. **F. Duan***, F. Chapeau-Blondeau, D. Abbott, Enhancing array stochastic resonance in ensembles of excitable systems, *Journal of Statistical Mechanics: Theory and Experiment*, 2009, art no.P08017, pp.1-16.

[46]. **F. Duan***, F. Chapeau-Blondeau, D. Abbott, Input-output gain of collective response in an uncoupled parallel array of saturating dynamical subsystems, *Physica A* 388 (2009) 1345-1351

[47]. **F. Duan***, D. Abbott, Aperiodic stochastic resonant data storage on directed small-world networks, *Proceedings of SPIE **7270***, 727014 , pp.1-8 (2008)

[48]. **F. Duan***, D. Abbott, F. Chapeau-Blondeau, The application of saturating detectors to a DCT-domain watermarking scheme, *Fluctuation and Noise Letters*, 8(1), L49-L65（2008）

[49]. F. Chapeau-Blondeau, **F. Duan***, D. Abbott, Signal-to-noise ratio of a dynamical saturating system: Switching from stochastic resonator to signal processor, *Physica A*, 387(11), pp.2394-2402 (2008).

[50]. **F. Duan***, F. Chapeau-Blondeau, D. Abbott, Stochastic resonance in a parallel array of nonlinear dynamical elements, *Phys. Lett. A*, 372， pp.2159-2166 (2008).

[51]. **F. Duan*** and D. Abbott, The application of bistable detectors to DCT-domain watermarking scheme, *Proceedings of SPIE **6802***, 680215 , pp.1-10 (2007)

[52]. **F. Duan***, D. Abbott, Binary modulated signal detection in a bistable receiver with stochastic resonance, *Physica A* , 376 (2007) pp.173–190.

[53]. **F. Duan***, F. Chapeau-Blondeau, D. Abbott, Noise-enhanced SNR gain in parallel array of bistable oscillators, *IEE Electronics Letters*, 42(17), pp.1008-1009, (2006).

[54]. **F. Duan***, D. Abbott, Signal detection for frequency-shift keying via short-time stochastic resonance, *Phys. Lett. A*, 344 (2005), pp.401-410

[55]. **F. Duan***, D. Abbott and Q. Gao, Evaluation of bistable systems versus matched filters in detecting bipolar pulse signals, *Fluctuation and Noise Letters*, 5(2), L127-L142 (2005)

[56]. D. Rousseau, J. Rojas Varela, **F. Duan**, F. Chapeau-Blondeau* "Evaluation of a nonlinear bistable filter for binary signal detection," *Int. J Bifurcation and chaos*, 15(2), pp.667-679 (2005)

[57]. **F. Duan***, D. Rousseau, F. Chapeau-Blondeau "Residual aperiodic stochastic resonance in bistable dynamic system transmitting a suprathreshold binary signal," *Physical Review E*， 69(1), no.011109, pp.1-10 (2004)

[58]. B. Xu, **F. Duan***, F. Chapeau-Blondeau "Comparison of aperiodic stochastic resonance in a bistable system realized by adding noise and tuning system parameters" *Physical Review E*, 69 (6), 061110, (2004)

[59]. D. Rousseau, **F. Duan**, F. Chapeau-Blondeau*, "Suprathreshold stochastic resonance and noise-enhanced Fisher information in arrays of threshold devices," *Phys. Rev. E*, 68 no.031107, pp.1-10, (2003)

[60]. **F. Duan**, B. Xu*, "Parameter-induced stochastic resonance and baseband binary PAM signal transmission over an AGWN channel," *Int. J. Bifurcation & Chaos*, vol.13, no.2, pp.411-425 (2003)

[61]. B. Xu*, J. Li, **F. Duan**, "Effects of colored noise on multi-frequency signal processing via stochastic resonance with tuning system parameters" *Chaos, Solitons & Fractals*, vol.16, no.1, pp.93-106, (2003)

[62]. B. Xu*, **F. Duan**, R. Bao, J. Li, "Stochastic resonance with tuning system parameters: the application of bistable systems in signal processing," *Chaos Solitons & Fractals*, 13(4): 633-644, 2002.