

URL	TITLE	ABSTRACT	AUTHORS	PUBLICATION	DATE	TYPE	DOI
http://ieeexplore.ieee.org/xpl/articleDetails.jsp?tp=&arnumber=5397726&contentType=Conference+Publications	Channel characterization in a tall building with an externally located transmitter	This paper presents results of experiments on characterization of wireless channels inside a tall building in Hung Hom, Hong Kong with the transmitter located atop the DE Block of the Hong Kong Polytechnic University and the channel measurements are made inside a nearby tall residential building. The channel probing signal centered at 1.8 GHz had a bandwidth of 60 MHz. The results were analyzed for impulse response parameters like mean delay spread, average delay and significant number of paths. The collected data are also analyzed for autocorrelation and power spectral density. It is observed that the wireless channel character varies from location to location within the building on the same floor. It is found that the orientation of the measurement location with respect to the transmitter has a significant impact on the channel impulse response.	Asrar U. H. Sheikh; Yousuf Al-Moallem	2009 7th International Conference on Information, Communications and Signal Processing (ICICS)	2009	Conference publication	10.1109/ICICS.2009.5397726
http://ieeexplore.ieee.org/xpl/articleDetails.jsp?tp=&arnumber=5707823&contentType=Conference+Publications	A distributed multi-robot adaptive sampling scheme for complex field estimation	Monitoring widespread environmental fields is a complex task that is of great use in many areas, such as building models of natural phenomenon: e.g. moisture in a crop field, oil reservoirs, etc. A successful monitoring of such spatio-temporally distributed fields hinges upon the use of wireless sensor networks which, through their distributed nature, allow for an effective adaptive sampling procedure to gather the statistical information necessary for field density estimation. The adaptive nature of the sampling procedure used embodies a strategy which selects the next sampling location based on the gathered statistical information, and which evolves with past measurements. This paper presents a novel distributed multi-robot "Adaptive sampling algorithm", which is an extension of the algorithm proposed earlier for complex field estimation using a single-robot only. New formulations of sensor fusion in a centralized, decentralized, federated-decentralized, and distributed sensor network are presented for field density estimation, and not just cloud boundary determination. A comparison of the various computational loads involved is included. Simulation results show that adding an efficient partitioning of the sampling area and parallel multi-robot sampling improves the field reconstruction time. With N robots, more than an N-fold reduction in the number of sampling times is observed. The federated and distributed scheme also leads to an improved communication and computational efficiency.	Muhammad F. Mysorewala; Lahouari Cheded; Mirza Salman Baig; Dan O. Popa	2010 11th International Conference on Control Automation Robotics & Vision	2010	Conference publication	10.1109/ICARCV.2010.5707823
http://ieeexplore.ieee.org/xpl/articleDetails.jsp?tp=&arnumber=852877&contentType=Conference+Publications	A dual page programming scheme for high-speed multi-Gb-scale NAND flash memories	The increasing demand for portable mass storage applications has created a need for a high-density and high-speed programming flash memory. One way to increase the program throughput is to increase the page size, i.e., the number of memory cells programmed simultaneously. But this requires additional page buffers and increases the chip size. To solve this problem, we propose a new programming scheme, where the page size is doubled without increasing the page buffers. The programming is accelerated by 73% in a 4 Gb product and 62% in a 4 Gb product without area penalty. 18.2 MB/sec 1 Gb or 30.7 MB/sec 4 Gb NAND flash memory can be realized with this new architecture	K. Takeuchi; T. Tanaka	2000 Symposium on VLSI Circuits. Digest of Technical Papers (Cat. No.00CH37103)	2000	Conference publication	10.1109/VLSIC.2000.852877

http://ieeexplore.ieee.org/xpl/articleDetails.jsp?tp=&arnumber=6315496&contentType=Conference+Publications	Modeling and control of a water gas shift membrane reactor for hydrogen production	Hydrogen is considered as an alternative to fossil fuels for energy production due to its high energy density and zero carbon emissions. It is typically produced from hydrocarbons via steam reforming or the water gas shift (WGS) reaction. In this paper, we develop a distributed model for a WGS membrane reactor which achieves higher carbon monoxide conversions than these achieved by conventional packed bed reactors. A steady-state analysis under different flow configurations reveals the presence of large temperature gradients (hot spots) in the reactor. Open-loop simulations demonstrate the necessity for a control strategy to suppress the hot spot and maintain the operation of the reactor under a specified temperature reflecting a catalyst operating limitation. Three different control strategies are proposed and a case study illustrates and evaluates their performance. A comparative study between a nonlinear and a PI controller is also performed.	Dimitrios Georgis; Fernando V. Lima; Ali Almansoori; Prodromos Daoutidis	2012 American Control Conference (ACC)	2012	Conference publication	10.1109/ACC.2012.6315496
http://ieeexplore.ieee.org/xpl/articleDetails.jsp?tp=&arnumber=1583354&contentType=Conference+Publications	Distributed delay model for density wave dynamics in gas lifted wells	Oil well instabilities cause production losses. One of these instabilities, referred to as the "density-wave" is an oscillatory phenomenon occurring on gas-lift artificially lifted well. We propose a distributed delay model of this dynamics. In order to interpret the observed oscillations we study the corresponding characteristic equation. Stabilization of this system is performed through a simple control law. Its performance is studied through realistic simulations.	L. Sinegre; N. Petit; P. Menegatti	Proceedings of the 44th IEEE Conference on Decision and Control	2005	Conference publication	10.1109/CDC.2005.1583354
http://ieeexplore.ieee.org/xpl/articleDetails.jsp?tp=&arnumber=5429554&contentType=Conference+Publications	Impulse-driven surface flashover of polymeric dielectric materials immersed in insulating oil	Surface flashover of dielectric components chosen to insulate high-voltage, pulsed-power machines is a limiting factor in the attainment of stable operation of such machines, and selection procedures for materials to be used under conditions with impulse rise-times in the nanosecond regime and associated high rates-of-change of electrical field are not well defined. The focus of the present work was therefore an experimental comparison of the flashover performance of four different polymeric dielectric materials, immersed in insulating oil, when subjected to fast-rising (~100 ns) impulse voltages. The time to breakdown/breakdown voltage of samples of: polypropylene; low-density polyethylene; ultra-high molecular weight polyethylene; and Rexolite; was analysed in both non-uniform and uniform fields. Low-density polyethylene showed the most consistent point of breakdown in non-uniform fields, for example with 94% of the data points located in the range between 138-204 ns and 282-332 kV for one set of test conditions. Ultra-high molecular weight polyethylene exhibited longer delay times to breakdown than the other materials. Measurements in uniform fields were restricted by the occurrence of bulk breakdown events. The results will provide data for high-voltage system designers for the appropriate choice of dielectric materials to insulate machines.	M. P. Wilson; M. J. Given; I. V. Timoshkin; S. J. MacGregor; M. A. Sinclair; K. J. Thomas	2009 44th International Universities Power Engineering Conference (UPEC)	2009	Conference publication	
http://ieeexplore.ieee.org/xpl/articleDetails.jsp?tp=&arnumber=4630645&contentType=Conference+Publications	Maximum A Posteriori EM MCE Logistic LASSO for learning fuzzy measures	A novel algorithm is introduced for learning fuzzy measures for Choquet integral-based information fusion. The new algorithm goes beyond previously published MCE-based approaches. It has the advantage that it is applicable to general measures, as opposed to only the Sugeno class of measures. In addition, the monotonicity constraints are handled easily with minimal time or storage requirements. Learning the fuzzy measure is framed as a maximum a posteriori (MAP) parameter learning problem. In order to maintain the constraints, this MAP problem is solved with a Gibbs sampler using an expectation maximization (EM) framework. For these reasons, the new algorithm is referred to as the MAP-EM MCE logistic LASSO algorithm. Results are given on synthetic and real data sets, the latter obtained from a landmine detection problem. Average reductions in false alarms of about 25% are achieved on the landmine detection problem and probabilities of detection in the interesting and meaningful range of 85%-95%.	Andres Mendez-Vazquez; Paul Gader	2008 IEEE International Conference on Fuzzy Systems (IEEE World Congress on Computational Intelligence)	2008	Conference publication	10.1109/FUZZY.2008.4630645

http://ieeexplore.ieee.org/xpl/articleDetails.jsp?tp=&arnumber=7542825&contentType=Conference+Publications	Bearing defect signature analysis based on a SAX-based association rule mining	Association rule mining provides the feasibility by taking an inverse approach for bearing defect signature analysis to directly mine associations between labeled defects and defect features instead of traditional forward fault diagnosis steps. Different from the common uniform partitioning approach used in association rule mining, a novel association rule mining approach has been proposed, based on a discretization method Symbolic Aggregate approXimation (SAX). In the presented method, the extracted features from sensing measurements are discretized and transformed into symbolic sequences according to the equalized distribution of the data. Next, the association relation between discretized features and labeled defect modes (or defect severities) is dug to generate the rules. The presented method partitions data equiprobably and avoids centralization or dispersion of the data, thus achieving more effective association rules for analyzing bearing defects. Experimental studies on bearing test data reveal that the proposed method is capable of generating a number of meaningful association rules in bearing defects and outperforms the discretization methods based on equal density and equal width technique.	Tangbo Bai; Yulong Zhang; Xuduo Wang; Lixiang Duan; Jinjiang Wang	2016 IEEE International Conference on Prognostics and Health Management (ICPHM)	2016	Conference publication	10.1109/ICPHM.2016.7542825
http://ieeexplore.ieee.org/xpl/articleDetails.jsp?tp=&arnumber=4022153&contentType=Conference+Publications	Markov Structure Random Sampler (MSRS) Algorithm from Unrestricted Discrete Graphic Markov Models	In this paper a new model random sampler algorithm, only based on the interaction structure of the model is presented. It means that the vector values of the parameters of the distribution are not needed to perform the sample generation. The algorithm is tested generating nine structure models of 10, 12, and 14 variables, and conditional independence restrictions with structures, sparse, mean and dense. Eight random samples are generated from each structure model, for a total of 72 random samples. To validate the results an external criterion is used. Every sample is given to the model selection algorithm implemented in MIM software, which obtains the structure of the departure model for 93% of the samples. In all cases the generation time of a sample was not greater than 4 minutes. The mean run time grows with the density of the models. The MSRS algorithm converges in at most 4 iterations.	Elva Diaz Diaz; Eunice Esther Ponce De Leon Senti	2006 Fifth Mexican International Conference on Artificial Intelligence	2006	Conference publication	10.1109/MICAI.2006.30
http://ieeexplore.ieee.org/xpl/articleDetails.jsp?tp=&arnumber=7076061&contentType=Conference+Publications	Gibbs sampler to stochastic volatility models	A new technique for nonlinear state and parameter estimation of the discrete time stochastic volatility models in which the logarithm of the asset return conditional variance follows an autoregressive model has been developed. The Gibbs sampling algorithm is used to construct a Markov-chain simulation tool that reflects both inherent model variability and parameter uncertainty. The proposed chain converges to an equilibrium making it possible to summarize the distributions of the unobserved volatilities and the unknown model parameters. The non-Gaussian density of the log of squared innovations is advantageously modelled as a mixture of Gaussians.	Miroslav Šimandl; Tomáš Soukup	2001 European Control Conference (ECC)	2001	Conference publication	