Workshop MURPHYS-HSFS-2014
Preliminary schedule of April 1st, 2014

Sunday, April 6th, 2014

	Get-together
18:30–21:30	Irish pub *Irish Times* at Leipziger Strasse 56

Monday, April 7th, 2014

8:30–10:00	Registration opens	
10:00–10:20	Opening	
	Overture	
	Chairperson: *S. Klapp*	
10:20–11:00	A. Visintin	Strong and weak formulation of models of hysteresis (Main talk, 40 min)
11:00–11:25	N. Rozov	Non-standard relaxation oscillations in singular ordinary differential equations (25 min)
11:25–11:50	O. Hovorka	Thermally activated processes in interacting spin clusters (25 min)
11:50–12:15	D. Davino	Identification of a new class of operators for the modeling of smart materials (25 min)
12:15–13:40	Lunch break	
	Solids, liquids, gases and their interactions	
	Chairperson: *I. Mayergoyz*	
13:40–14:20	S. Klapp	Non-equilibrium dynamics of colloidal films under shear: Nonlinearities, hysteresis, and the impact of feedback control (Main talk, 40 min)
14:20–14:45	S. Sazhin	Modelling of automotive fuel droplet heating and evaporation (25 min)
14:45–15:10	B. Albers	On modeling the hysteretic behavior of the capillary pressure in partially saturated soils (25 min)
15:10–15:35	P. Nábělková	Porous media flow with hysteresis (25 min)
15:35–16:05	Coffee break	
	Magnetization	
	Chairperson: *J. Sprekels*	
16:05–16:45	I. Mayergoyz	Magnetization dynamics driven by A jump-noise process and stochastic processes on graphs (Main talk, 40 min)
16:45–17:10	A. Stancu	FORC experimental technique from qualitative to quantitative interpretation. What are the limits? (25 min)
17:10–17:35	A. Ktena	SWOT analysis of magnetic Barkhausen noise as a microstructure characterization tool (25 min)
17:35–18:00	M. Dimian	Noise-assisted phenomena in hysteretic systems (25 min)

Tuesday, April 8th, 2014

	Delay dynamics and steady states	
	Chairperson: *L. Kalachev*	
09:00–09:40	T. Erneux	Square-wave delay dynamics (Main talk, 40 min)
09:40–10:05	A. Kuznetsov	Relaxation oscillations and chaos in a delay differential equation model of a regulatory network (25 min)
10:05–10:30	D. Flockerzi	N-site phosphorylation systems with $2N-1$ steady state (25 min)
10:30–11:00	Coffee break	
	Dynamical systems	
	Chairperson: *V. Sobolev*	
11:00–11:40	E. Schöll	Spontaneous symmetry-breaking, oscillation death, and chimera states in dynamical networks (Main talk, 40 min)
11:40–12:05	E. Shchepakina	Invariant surfaces of variable stability (25 min)
12:05–12.30	C. Kuehn	Multiscale dynamics and mixed-mode oscillations (25 min)
12:30–13:45	Lunch break	
	Hysteresis I	
	Chairperson: *B. Kaltenbacher*	
13:45–14:25	F. Otto	Domain pattern in ferromagnets: energy landscape and hysteresis (Main talk, 40 min)
14:25–14.50	J. Kopfová	A new phase field model for material fatigue in oscillating elastoplastic beam (25 min)
14:50–15:15	M. Ruderman	On damping characteristics of frictional hysteresis in pre-sliding regime (25 min)
15:15–15:45	Coffee break	
	Rate-(in)dependent systems	
	Chairperson: *A. Visintin*	
15:45–16:25	A. Mielke	Modeling jumps in rate-independent systems using balanced-viscosity solutions (Main talk, 40 min)
16:25–16:50	V. Recupero	Vector and metric hysteresis evolution processes (25 min)
16:50–17:15	R. Rossi	Beyond rate-independence: the coupling with viscosity and inertia (25 min)
17:15–17:40	M. Thomas	Rate-independent, partial damage in thermo-visco-elastic materials (25 min)

Wednesday, April 9th, 2014

	Pattern formation	
	Chairperson: *T. Erneux*	
09:00–09:40	M. Bär	Modelling multiscale pattern formation (Main talk, 40 min)
09:40–10:05	A. Marciniak-Czochra	Hysteresis-driven pattern formation in biological systems (25 min)
10:05–10:30	Ch. Hinz	Self-organized vegetation pattern in arid environments (25 min)
10:30–10:55	S. Alonso	Traveling waves and global oscillations triggered by molecular interactions in an excitable system (25 min)
10:55–11:25	Coffee break	
	Biology and market models	
	Chairperson: *M. Bär*	
11:25–12:05	G. Friedman	Hysteresis and bet-hedging in stochastic environments (Main talk, 40 min)
12:05–12:30	A. Pimenov	Robust homocline in a predator-prey system with hysteresis (25 min)
12:30–12:55	L. Werner	Hysteresis and Asymmetry: Two Perspectives on pricing-to-market nonlinearity (25 min)
12:50–13:20	M. Göcke	Play-hysteresis in supply or in demand as Part of a market model (25 min)
13:20 –14:00	Lunch break	
	Excursion	
14:00 – 14:30	Walk to shipping pier	
14:45 – 17:15	Boat trip	
19:00 – 21:30	**Conference Dinner**	

Thursday, April 10th, 2014

	Hysteresis II	
	Chairperson: *N. Nefedov*	
09:00–09:40	M. Brokate	Hysteresis and control (Main talk, 40 min)
09:40–10:05	D. Apushkinskaya	Regularity properties in hysteresis-type problems (25 min)
10:05–10:30	P. Gurevich	Discrete reaction-diffusion equations with hysteresis (25 min)
10:30–11:00	Coffee break	
	Hysteresis III and an Allen–Cahn system	
	Chairperson: *P. Krejčí*	
11:00–11:40	J. Sprekels	A deep quench approach to the optimal control of an Allen–Cahn system with dynamic boundary conditions and double-obstacle potentials (Main talk, 40 min)
11:40–12:05	M. Eleuteri	Fatigue accumulation in oscillating elastoplastic plates (25 min)
12:05–12:30	R. Iyer	Investigation of losses due to hysteresis in capillary effect (25 min)
12:30–13:40	Lunch break	
	Hysteresis IV and bio-medical applications	
	Chairperson: *M. Brokate*	
13:40–14:20	B. Kaltenbacher	Modelling ferroelectric and ferroelastic hysteresis: Thermodynamical consistency by hysteresis potentials singular PDEs (Main talk, 40 min)
14:20–15:00	L. Kalachev	Asymptotic reduction of models in bio-medical applications (Main talk, 40 min)
15:00–15:25	E. Ron	Controlling the controller: differential equations with hysteresis and delay (25 min)
15:25–15:55	Coffee break	
	Reaction-diffusion-equations	
	Chairperson: *A. Mielke*	
15:55–16:20	N. Nefedov	Multiple scale reaction-diffusion-advection problems with moving fronts (25 min)
16:20–16:45	V. Gol'dshtein	Global reduction method for chemical kinetics (25 min)
16:45–17:10	N. Kopteva	A singularly perturbed semilinear reaction-diffusion problem in a polygonal domain (25 min)
17:10–17:35	S. Reichelt	Effective equations for reaction-diffusion systems in strongly heterogeneous media (25 min)

Friday, April 11th, 2014

	Finale, part one	
	Chairperson: *E. Shchepakina*	
09:00–09:40	P. Krejčí	Some applications of hysteresis energy potentials (Main talk, 40 min)
09:40–10:20	V. Sobolev	Slow integral manifolds in a twice critical case (Main talk, 40 min)
10:20–10:50	Coffee break	
	Finale, part two	
	Chairperson: *C. Kuehn*	
10:50–11:15	U. Stefanelli	The rate-independent limit $p \to 1$ (25 min)
11:15–11.40	N. Popovic	A geometric analysis of fast-slow models for stochastic gene expression (25 min)
11:40–12:05	D. Rachinskii	Networks of Prandtl-Ishlinskii operators (25 min)
12:05–12:30	O. Klein	String-representation of hysteresis operators acting on vector-valued, left-continuous and piecewise monotaffine and continuous functions (25 min)
12:30–13:00	Closing	
13:00	End of Workshop	