

Karl Crailsheim

Reviewed full papers in journals, conference proceedings (robotic and modeling) and books, January 2013

Crailsheim K., Brodschneider R., Aupinel P., Behrens D., Genersch E., Vollmann J., Riessberger-Gallé U. (2013): Standard methods for artificial rearing of *Apis mellifera* larvae. In: Dietemann, V; Ellis, J D; Neumann, P (Eds) The COLOSS BEEBOOK Volume 1: Standard methods for *Apis mellifera* research. *Journal of Apicultural Research*, 52, 1

Thenius R., Bodi M., Schmickl T. & Crailsheim K. (2013) Novel method of virtual embryogenesis for structuring Artificial Neural Network controllers. *Mathematical and Computer Modelling of Dynamical Systems*, <http://dx.doi.org/10.1080/13873954.2012.756527>

Kalcher-Sommersguter E., Franz-Schaidler C., Crailsheim K., & Preuschoft S. (2013): Social Competence of Adult Chimpanzees (*Pan troglodytes*) with Severe Deprivation History: A Relational Approach. *International Journal of Comparative Psychology*, (in press)

Kalcher-Sommersguter E., Franz-Schaidler C., Preuschoft S. & Crailsheim K. (2013): Long-Term Evaluation of Abnormal Behavior in Adult Ex-Laboratory Chimpanzees (*Pan troglodytes*) Following Re-socialization. *Behavioral Sciences*, 3, 99-119.

Brodschneider R., Arnold G., Hrassnigg N., Crailsheim K. (2012): Does Patriline Composition Change over a Honey Bee Queen`s Lifetime? *Insects*, Volume 3, Issue 3, 857-869. (doi:10.3390/insects3030857)

Hamann H., Schmickl T., Crailsheim K. (2012): A hormone-based controller for evaluation-minimal evolution in decentrally controlled systems. *Artificial Life*, Volume 18, Issue 2, 165-198.

Bodi M., Thenius R., Szopek M., Schmickl T., Crailsheim K. (2012): Interaction of robot swarms using the honeybee-inspired control algorithm BEECLUST. *Mathematical and Computer Modelling of Dynamical Systems: Methods, Tools and Applications in Engineering and Related Sciences*, Volume 18, Issue 1, 87-100.

Zahadat P., Schmickl T., Crailsheim K. (2012): Evolving Reactive Controller for a Modular Robot: Benefits of the Property of State-Switching in Fractal Gene Regulatory Networks. *Lecture Note in Computer Science*, Volume 7426/2012, 209-218. (DOI: 10.1007/978-3-642-33093-3_21)

van der Zee R., Pisa L., Andonov S., Brodschneider R., Charrière J-D., Chlebo R., Coffey M.F., Crailsheim K., Dahle B., Gajda A., Gray A., Drazic M.M., Higes M., Kauko L., Kence A., Kence M., Kezic N., Kiprijanovska H., Kralj J., Kristiansen P., Hernandez R.M., Mutinelli F., Nguyen B.K., Otten C., Özkırım A., Pernal S.F., Peterson M., Ramsay G., Santrac V., Soroker V., Topolska G., Uzunov A., Vejsnæs F., Wei S., Wilkins S. (2012): Managed honey bee colony losses in Canada, China, Europe, Israel and Turkey, for the winters of 2008-9 and 2009-10. *Journal of Apicultural Research* 51: 100-114.

Hamann H., Schmickl T., Crailsheim K. (2012):

Self-organized pattern formation in a swarm system as a transient phenomenon of a non-linear dynamics.

Mathematical and Computer Modeling of a Dynamical System: Methods, Tools and Applications in Engineering and Related Sciences, Volume 18, Issue 1, 39-50

Schmickl T., Thenius R., Crailsheim K. (2012):

Swarm-intelligent foraging in honeybees: benefits and costs of task-partitioning and environmental fluctuations.

Neural Computing & Applications, 21: 251-268.

(online published 2010 DOI: 10.1007/s00521-010-0357-9)

Hamann H., Schmickl T., Wörn H., Crailsheim K. (2012):

Analysis of emergent symmetry breaking in collective decision making.

Neural Computing & Applications, 21: 207–218.

(online published 2010 DOI: 10.1007/s00521-010-0368-6)

Kengyel D., Schmickl T., Hamann H., Thenius R., Crailsheim K. (2011):

Embodiment of honeybee's thermotaxis in a mobile robot swarm.

Lecture Notes in Computer Science, Volume 5778, Issue 2, 69-76.

Bodi M., Thenius R., Schmickl T., Crailsheim K. (2011):

How two cooperating robot swarms are affected by two conflictive aggregation spots?

Lecture Notes in Computer Science, Volume 5778/2011, Issue 2, 367-374.

Dauschan M., Thenius R., Schmickl T., Crailsheim K. (2011):

Using Virtual Embryogenesis in Multi-robot Organisms.

Lecture Notes in Artificial Intelligence, Volume 6943/2011 238-247.

(DOI: 10.1007/978-3-642-23857-4_25)

Thenius R., Bodi M., Schmickl T., Crailsheim K. (2011):

Growth of Structured Artificial Neural Networks by Virtual Embryogenesis.

Volume 5778, 118-125. (DOI: 10.1007/978-3-642-23857-4_24)

Thenius R., Dauschan M., Schmickl T., Crailsheim K. (2011):

Regenerative Abilities in Modular Robots Using Virtual Embryogenesis.

Lecture Notes in Artificial Intelligence, Volume 6943, 227-237.

(DOI: 10.1007/978-3-642-23857-4_24)

Hamann H., Schmickl T., Crailsheim K. (2011):

Evolving for Creativity: Maximizing Complexity in a Self-organized Multi-particle System.

Lecture Notes in Computer Science, Volume 5777, 442-449.

(DOI : 10.1007/978-3-642- 21283-3_55)

Schmickl T., Stradner J., Hamann H., Winkler L., Crailsheim K. (2011):

Major Feedback Loops Supporting Artificial Evolution in Multi-modular Robotics.

Studies in Computational Intelligence Volume 341, 195-209.

Schmickl T., Crailsheim K. (2011):

Economics of Specialization in Honeybees A Multi-agent Simulation Study of Honeybees

Lecture Notes in Computer science, Volume 5778, 358-366.

Havas D., Hutter-Paier B., Ubhi K., Rockenstein E., Crailsheim K.,

Masliah E., Windisch M. (2011):

A Longitudinal Study of Behavioral Deficits in an A β PP Transgenic Mouse Model of Alzheimer's Disease.

Journal of Alzheimer`s Disease, Volume 25, Number 2, 231-243.

- Sturm G.J., Jin C., Kranzelbinder B., Hemmer W., Sturm E.M., Griesbacher A., Heinemann A., Vollmann J., Altmann F., Crailsheim K., Focke M., Aberer W. (2011):
Inconsistent Results of Diagnostic Tools Hamper the Differentiation between Bee and Vespid Venom Allergy.
PLoS ONE Volume 6, Issue 6, 1-8.
- Schmickl T., Hamann H., Crailsheim K. (2011):
Modelling a hormone-inspired controller for individual- and multi-modular robotic systems.
Mathematical and Computer Modelling of Dynamical Systems: Methods, Tools and Applications in Engineering and Related Sciences, Volume 17, Issue 3, 221-242.
- Moeslinger C., Schmickl T., Crailsheim K. (2011):
A Minimalist Flocking Algorithm for Swarm Robots.
Lecture Notes in Computer science, Volume 5778/2011, 375-382.
- Kalcher-Sommersguter E., Preuschoft S., Crailsheim K., Franz C. (2011):
Social competence of adult chimpanzees (*Pan troglodytes*) with severe deprivation history: An individual approach. *Developmental Psychobiology*, 47 (1) 77-90.
- Stradner J., Hamann H., Schmickl T., Thenius R., Crailsheim K. (2011):
Evolving a Novel Bio-inspired Controller in Reconfigurable Robots.
Lecture Notes in Computer science, Volume 5777/2011, 132-139.
- Thenius R., Bodi M., Schmickl T., Crailsheim K. (2010):
Using Virtual Embryogenesis for Structuring Controllers.
Lecture notes in Computer Science, Volume 6209, 312-313.
- Hamann H., Meyer B., Schmickl T., Crailsheim K. (2010):
A Model of Symmetry Breaking in Collective Decision-Making.
Lecture Notes in Artificial Intelligence, Volume 6226, 639-648.
- Moeslinger C., Schmickl T., Crailsheim K. (2010):
Emergent Flocking with Low-End Swarm Robots.
Lecture Notes in Computer science, Volume 6234, 424-431.
- Mayet R., Roberz J., Schmickl T., Crailsheim K. (2010):
Antbots: A Feasible Visual Emulation of Pheromone Trails for Swarm Robots
Lecture Notes in Computer science, Volume 6234/2010, 84-94.
- Hamann H., Stradner J., Schmickl T., Crailsheim K. (2010):
Artificial Hormone Reaction Networks: Towards Higher Evolvability in Evolutionary Multi-Modular Robotics. Steen Rasmussen (Eds.): Proceedings of the 12th International Conference on Artificial Life (Alife XII). MIT Press 2010.
- Stradner J., Hamann H., Schmickl T., Thenius R., Crailsheim K. (2010):
Evolving a novel bio- inspired controller in reconfigurable robots. *Lecture Notes in Computer Science*. Springer, in Press
- Brodtschneider R., Crailsheim K. (2010):
Nutrition and Health in the Honeybee (Review) (2010). *Apidologie* 41 (3): 278-294.
- Schmickl T., Hamann H., Stradner J., Crailsheim K. (2010):
Hormone-based Control for Multi- modular Robotics. P. Levi and S. Kernbach (Eds.):
Symbiotic Multi-Robot Organisms: Reliability, Adaptability, Evolution. Springer 2010:
242 – 264.

- Thenius R., Bodi M., Schmickl T., Crailsheim K. (2010):
Evolving Artificial Neural Networks and Artificial Embryology. P. Levi, S. Kernbach (Eds.):
Symbiotic Multi-Robot Organisms: Reliability, Adaptability, Evolution. Springer 2010: 265 –
284.
- Thenius R., Bodi M., Schmickl T., Crailsheim K. (2010):
Using Virtual Embryogenesis for Structuring Controllers. Lecture Notes in Computer
Science, Volume 6209, Artificial Immune Systems, Pages 312-313.
- Schmickl T., Hamann H., Stradner J., Mayet R., Crailsheim K. (2010):
Complex Taxis-Behaviour in a Novel Bio-Inspired Robot Controller. Steen Rasmussen (Eds.):
Proceedings of the 12th International Conference on Artificial Life (Alife XII). 648-655.
- Hamann H., Stradner J., Schmickl T., Crailsheim K. (2010):
A Hormone-Based Controller for Evolutionary Multi-Modular Robotics: From Single
Modules to Gait Learning. Proc. of the IEEE Congress on Evolutionary Computation
CEC'10: 244 - 251.
- Brodtschneider R., Moosbeckhofer R., Crailsheim K. (2010):
Surveys as a tool to record winter losses of honey bee colonies: a two year case study in
Austria and South Tyrol. Journal of Apicultural Research 49 (1): 23-30.
- Stradner J., Hamann H., Schmickl T., Crailsheim K. (2009):
Analysis and Implementation of an Artificial Homeostatic Hormone System: A First Case
Study in Robotic Hardware. IEE-RSJ International Conference on Intelligent Robots and
Systems, 595-600. (DOI: 10.1109/IROS.2009.5354056)
- Schmickl T., Thenius R., Moeslinger C., Radspieler G., Kernbach S., Szymanski M., Crailsheim K.
(2009):
Get in touch: cooperative decision making based on robot-to-robot collisions.
Autonomous Agents and Multi-Agent Systems, Volume: 18, Issue 1, 133-155.
- Kernbach S., Hamann H., Stradner J., Thenius R., Schmickl T., Crailsheim K., Vab Rossum
A.C., Sebag M., Bredeche N., Yao Y., Baele G., Van De Peer Y., Timmis J., Mohktar M.,
Tyrrell A., Eiben A.E., McKibbin S.P., Liu W., Winfield A.F.T. (2009):
On adaptive self-organization in artificial robot organisms.
Computation World: Future Computing, Service Computation, Adaptive, Content, Cognitive,
Patterns, Computation World, Article number 5359550, 33-43.
- Schmickl T., Hamann H., Wörn H., Crailsheim K., (2009):
Two Different Approaches to a Macroscopic Model of a Bio-Inspired Robotic Swarm.
Robotics and Autonomous Systems 57(9): 913 – 921.
- Brodtschneider R., Riessberger-Gallé U., Crailsheim K. (2009):
Flight performance of artificially reared honeybees (*Apis mellifera*).
Apidologie 40 (4), 441-449.
Published Online: 25 March 2009, DOI: 10.1051/apido/2009006
- Kalcher E., Cornelia F., Crailsheim K., Preuschoft S. (2008):
Differential onset of infantile deprivation produces distinctive long-term effects in adult ex-
laboratory chimpanzees (*Pan troglodytes*).
Developmental Psychobiology 50 (8): 777-788.
(DOI: 10.1002/dev.20330)

Schmickl T., Crailsheim K. (2008):

Trophallaxis within a robot swarm: Bio-inspired communication among robots in a swarm. *Autonomous Robots* 25: 171-188.

Schmickl T., Crailsheim K. (2008):

TaskSelSim: A Model of the Self-Organisation of the Division of Labour of Honeybees.

Mathematical and Computer Modelling of Dynamical Systems 14: 101–125.

Thenius R., Schmickl T., Crailsheim K. (2008):

Optimisation of a honeybee-colony's energetics via social learning based on queuing delays. *Connection Science* 20 (2-3): 193-210.

(DOI: 10.1080/09540090802091982)

Schmickl T., Thenius R., Radspieler G., Kernbach S., Szymanski M., Crailsheim K. (2008):

Get in touch: cooperative decision making based on robot-to-robot collisions.

Autonomous Agents and Multi-Agent Systems DOI 10.1007/s10458-008-9058-5.

Hamann H., Wörn H., Crailsheim K., Schmickl T. (2008):

Spatial Macroscopic Models of a Bio- Inspired Robotic Swarm Algorithm. Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems, IROS'08, Nice, France, September 22-26, pp. 1415-1420, IEEE Press, 2008.

Schmickl T., Crailsheim K. (2008):

An individual-based model of task selection in honeybees.

Lecture Notes in Computer Science 5040: 383-392.

Schmickl T., Crailsheim K. (2008):

Analysing honeybees' division of labour in broodcare by a multi- agent model. In: Bullock, S., Noble, J., Watson, R., Bedau, M. A. (eds.) *Artificial Life XI: Proceedings of the Eleventh International Conference on the Simulation and Synthesis of Living Systems*. MIT Press, Cambridge, MA: 529-536.

Kärcher M., Biedermann P., Hrassnigg N., Crailsheim K. (2008):

Predator-prey interaction between drones of *Apis mellifera carnica* and insectivorous birds *Apidologie* 39 (3): 302-309 (DOI: 10.1051/apido:2008001).

Schmickl T., Thenius R., Moeslinger C., Radspieler G., Kernbach S., Szymanski M., Crailsheim K. (2008):

Get in touch: cooperative decision making based on robot-to-robot collisions. *Autonomous Agents and Multi-Agent Systems* 18(1): 133 - 155.

Schmickl T., Möslinger C., Thenius R., Crailsheim K. (2007):

Individual adaptation allows collective path-finding in a robotic swarm. *International Journal of Factory Automation, Robotics and Soft Computing* 4: 102 – 108.

Schmickl T., Möslinger C., Thenius R., Crailsheim K. (2007):

Bio-inspired Navigation of Autonomous Robots in Heterogenous Environments. *International Journal of Factory Automation, Robotics and Soft Computing* 3: 164-170. ISSN 1828-6984.

Schmickl T., Crailsheim K. (2007):

HoPoMo: A model of honeybee intracolony population dynamics and resource

management. *Ecological Modelling* 204 (1-2): 219 – 245.

Schmickl T., Crailsheim K. (2007):

A Navigation Algorithm for Swarm Robotics Inspired by Slime Mold Aggregation. In: *Swarm Robotics; Second SAB 2006 International Workshop*. Sahin E., Spears W.M., Winfield A.F.T. (eds.). *Lecture Notes in Computer Science 4433*: 1 – 13.

Schmickl T., Möslinger, C., Crailsheim K. (2007):

Collective perception in a robot swarm. In: *Swarm Robotics; Second SAB 2006 International Workshop*. Sahin E., Spears W.M., Winfield A.F.T. (eds.). *Lecture Notes in Computer Science 4433*: 144 – 157.

Schmickl T., Crailsheim K. (2007):

HoPoMo: A model of honeybee intracolony population dynamics and resource management. *Ecological Modelling* 204: 219 – 245.

Schmickl T., Crailsheim K. (2007):

A Navigation Algorithm for Swarm Robotics Inspired by Slime Mold Aggregation. In: *Swarm Robotics; Second SAB 2006 International Workshop*. Sahin E., Spears W.M., Winfield A.F.T. (eds.). *Lecture Notes in Computer Science 4433*: 1 – 13.

Kovac H., Stabentheiner A., Hetz S., Crailsheim K. (2007):

Respiration of resting honeybees. *Journal of Insect Physiology* 53 (12):1250-1261.

Mörwald H., Wurm S., Crailsheim K., Wechselberger C. (2007):

Prion Protein facilitates hormone induced differentiation of mammary gland epithelial cells. *Biochemical and Biophysical Research Communications*, 360 (4):746-751.

Eberhard S.H., Hrassnigg N., Crailsheim K., Krenn H.W. (2007):

Evidence of protease in the saliva of the butterfly *Heliconius melpomene* (L.) (Nymphalidae, Lepidoptera).

Journal of Insect Physiology 53 (2): 126-131.

(DOI: 10.1016/j.jinsphys.2006.11.001)

Schmickl T., Crailsheim K. (2006):

Bubbleworld.Evo: Artificial Evolution of Behavioral Decisions in a Simulated Predator-Prey Ecosystem *Lecture Notes in Computer Science 4095*: 594-605, Springer Berlin / Heidelberg 0302-9743

Valdastri P., Corradi P., Menciassi A., Schmickl T., Crailsheim K.,

Seyfried S., Dario P. (2006):

Micromanipulation; Communication and Swarm Intelligent Issues in a Swarm Microbotic Platform. *Robotics and Autonomous Systems* 54 (10): 789-804.

Schmickl T., Crailsheim K. (2006):

Trophallaxis among swarm-robots: A biologically inspired strategy for swarm robotics. *Proceedings of the 1st IEE/RAS-EMBS International Conference on Biomedical Robotics and Biomechanotronics (BIOROB 2006)*.

20.2.-22.2.2006, Pisa, Italy. ISBN 1-4244-0040-6, IEEE-Catalog-No: 06EX1254D.

Volume 1-3, 176-181.

Schmickl T., Crailsheim K. (2006):

Modelling the self-organized division of labour in honeybees. *Proceedings of the 5th Vienna Symposium on Mathematical Modelling (MATHMOD)*, 8.2.-10.2.2006, Vienna. ARGESIM Report Nr. 30, eds. I.Troch, F.Breitenecker. ISBN 3-901608-3.

- Thenius R., Schmickl T., Crailsheim K. (2006):
Modelling nectar-collecting behaviour in a honeybee colony. Proceedings of the 5th Vienna Symposium on Mathematical Modelling (MATHMOD), 8.2.-10.2.2006, Vienna. ARGESIM Report Nr. 30, eds. I.Troch, F.Breitenecker. ISBN 3-901608-3.
- Schäfer M.O., Dietemann V., Pirk C.W.W., Neumann P., Crewe R.M., Hepburn H.R., Tautz J., Crailsheim K. (2006):
Individual versus social pathways in honeybee worker reproduction (*Apis mellifera*): pollen or jelly as protein sources for oogenesis?
Journal of Comparative Physiology A 192 (7): 761-768
- Thenius R., Schmickl T., Crailsheim K. (2006):
Economic optimisation in honeybees: Adaptive behaviour of a superorganism
LECTURE NOTES IN COMPUTER SCIENCE 4095: 725-737.
Springer Berlin / Heidelberg 0302-9743
- Thenius R., Schmickl T., Crailsheim K. (2005):
The “Dance or Work” Problem: Why do not all honeybees dance with maximum intensity?
Lecture Notes in Artificial Intelligence, Volume 3690: 246-255.
Springer-Verlag GmbH ISSN : 03029743
- Schmickl T., Thenius R., Crailsheim K. (2005):
Simulating swarm intelligence in honey bees: Foraging in differently fluctuating environments.
In: GECCO'05, Washington, DC, USA (ACM 1-59593-010-8/05/0006), Vols 1 and 2, 273-274
- Hrassnigg N., Brodschneider R., Fleischmann P.H., Crailsheim K. (2005):
Unlike nectar foragers, honeybee drones (*Apis mellifera* L.) are not able to utilize starch as fuel for flight. *Apidologie* 36 (4): 547-557.
(DOI: 10.1051/apido:2005042)
- Hrassnigg N., Crailsheim K. (2005):
Differences in drone and worker physiology in honeybees (*Apis mellifera* L.)
Review Article (invited)
Apidologie 36 (2): 255-277.
- Schmickl T., Crailsheim K. (2004):
Costs of environmental fluctuations and benefits of dynamic decentralized foraging decisions in honey bees.
Adaptive Behavior 12 (3-4), 263 - 277.
- Danzer M., Jovic M., Samberger C., Painsipp E., Bock E., Pabst M.A., Crailsheim K., Schicho R., I Lippe I.T., Holzer P. (2004):
Stomach-brain communication by vagal afferents in response to luminal acid backdiffusion, gastrin and gastric acid secretion.
The American Journal of Physiology - Gastrointestinal and Liver Physiology 286 (3): G403-G411.

- Schmickl T., Crailsheim K. (2004):
Inner nest homeostasis in a changing environment with special emphasis on honey bee brood nursing and pollen supply. Review Article
Apidologie 35 (3): 249-263.
- Horejsi R., Möller R., Rackl S., Giuliani A., Freytag U., Crailsheim K., Sudi K., Tafeit E. (2004):
Android subcutaneous adipose tissue topography in lean and obese women suffering from PCOS: Comparison with type 2 diabetic women.
American Journal of Physical Anthropology 124 (3): 275-281.
- Wallner S.J., Luschnigg N., Schnedl W.J., Lahousen T., Sudi K., Crailsheim K., Möller R., Tafeit E., Horejsi R., (2004):
Body fat distribution of overweight females with a history of weight cycling. *International Journal of Obesity* 28:1143-1148.
- Petz M., Stabentheiner A., Crailsheim K. (2004):
Respiration of individual honeybee larvae in dependence on age and ambient temperature.
Journal of comparative Physiology B 174 (7): 511-518.
(DOI: 10.1007/s00360-004-0439-z)
- Schmickl T., Crailsheim K. (2004):
Costs of environmental fluctuations and benefits of dynamic decentralized foraging decisions in honey bees.
Adaptive Behavior 12 (3-4): 263-277.
- Schmickl T., Blaschon B., Gurmman B., Crailsheim K. (2003):
Collective and individual nursing investment in the queen and in young and old honeybee larvae during foraging and non-foraging periods. *Insectes Sociaux* 50 (2), 174 - 184.
- Hrassnigg N., Leonhard B., Crailsheim K. (2003).
Free amino acids in the haemolymph of honey bee queens (*Apis mellifera* L.)
Amino Acids 24 (1-2): 205-212.
- Wedenig M., Riessberger-Gallé U., Crailsheim K. (2003):
A substance in honey bee larvae inhibits the growth of *Paenibacillus* larvae larvae.
Apidologie 34 (1): 43-51.
- Stabentheiner A., Pressl H., Pabst T., Hrassnigg N., Crailsheim K. (2003):
Endothermic heat production in honeybee winter clusters.
Journal of Experimental Biology 206 (2): 353-358.
(DOI: 10.1242/jeb.00082)
- Tafeit E., Möller R., Rackl S., Giuliani A., Urdl W., Freytag U., Crailsheim K., Sudi K., Horejsi R. (2003):
Subcutaneous Adipose Tissue Pattern in Lean and Obese Women with Polycystic Ovary Syndrome.
Experimental Biology and Medicine 228 (6): 710-716.
- Stabentheiner A., Vollmann J., Kovac H., Crailsheim K. (2003):
Oxygen Consumption and body temperature of active and resting honeybees.
Journal of Insect Physiology 49 (9): 881-889.

- Schmickl T., Blaschon B., Gurmman B., Crailsheim K. (2003):
Collective and individual nursing investment in the queen and in young and old honeybee larvae during foraging and non-foraging periods.
Insectes Sociaux 50 (2):174-184.
- Schmickl T., Crailsheim K. (2002) :
How honeybees (*Apis mellifera* L.) change their broodcare behaviour in response to non-foraging conditions and poor pollen conditions.
Behavioural Ecology and Sociobiology 51 (5): 415-425
- Hinze B., Crailsheim K., Leuthold R.H. (2002):
Polyethism in food processing and social organisation in the nest of *Mecrothermes bellicosus* (Isoptera, Termitidae).
Insectes Sociaux 49 (1): 31-37 (DOI: 10.1007/s00040-002-8275-1)
- Lodesani M., Crailsheim K., Moritz R.F.A. (2002):
Effects of some characters on the population growth of mite *Varroa jacobsoni* in *Apis mellifera* L colonies and results of a bi-directional selection.
Journal of Applied Entomology 126 (2-3): 130-137.
(DOI: 10.1046/j.1439-0418.2002.00615.x)
- Schmickl T., Crailsheim K. (2002):
How honeybees (*Apis mellifera* L.) change their broodcare behaviour in response to non-foraging conditions and poor pollen conditions.
Behavioral Ecology and Sociobiology 51, 415 - 425.
- Schmickl T., Crailsheim K. (2001):
Cannibalism and early capping: strategy of honeybee colonies in times of experimental pollen shortages.
Journal of Comparative Physiology A 187, 541 - 547.
- Riessberger-Gallé U., von der Ohe W., Crailsheim K. (2001):
Adult honeybee's resistance against *Paenibacillus larvae* larvae, the causative agent of the American foulbrood.
Journal of Invertebrate Pathology 77 (4): 231-236. (DOI: 10.1006/jipa.2001.5032)
- Crailsheim K., Riessberger-Gallé U. (2001):
Honey bee age-dependent resistance against American foulbrood
Apidologie 32 (1): 91-103.
- Loidl A., Crailsheim K. (2001):
Free fatty acids digested from pollen and triolein in the honeybee (*Apis mellifera carnica* Pollmann) midgut.
Journal of Comparative Physiology B 171 (4): 313-319.
- Schmickl T., Crailsheim K. (2001):
Cannibalism and early capping: strategy of honeybee colonies in times of experimental pollen shortages.
Journal of Comparative Physiology A 187 (7): 541-547.

- Azab S.G., Sadek M.M., Crailsheim K. (2001):
Protein metabolism in larvae of the cotton leaf-worm *Spodoptera littoralis* (Lepidoptera:Noctuidae) and its response to three mycotoxines.
Environmental Entomology 30 (5): 817-823.
- Wronski R., Tompa P., Hutter-Paier B., Crailsheim K., Friedrich P., Windisch M. (2000):
Inhibitory effect of a brain derived peptide preparation on the Ca⁺⁺-dependent protease, calpain. *Journal of Neural Transmission* 107 (2): 145-157.
- Micheu S., Crailsheim K., Leonhard B. (2000):
Importance of proline and other amino acids during honeybee flight (*Apis mellifera* POLLMANN)
Amino Acids 18 (2): 157-175.
- Wakonigg G., Eveleigh L., Arnold G., Crailsheim K. (2000):
Cuticular hydrocarbon profiles reveal age-related changes in honey bee drones (*Apis mellifera carnica*).
Journal of Apicultural Research 39 (3-4): 137-141.
- Wronski R., Kronawetter S., Hutter-Paier B., Crailsheim K., Windisch M. (2000):
A brain derived peptide preparation reduces the translation dependent loss of a cytoskeletal protein in primary cultured chicken neurons.
Journal of Neural Transmission (Supplement) 59: 263-272.
- Pfeiffer K.J., Crailsheim K. (1999):
The behaviour of drifted nurse honey bees
Insectes Sociaux, 46: 34-40.
- Crailsheim K., Stabentheiner A., Hrassnigg N., Leonhard B. (1999):
Oxygen Consumption at different activity levels and ambient temperatures in honeybees (Hymenoptera: Apidae).
Entomologia Generalis 24:001-012.
- Stabentheiner A., Crailsheim K. (1999):
The effect of activity level and ambient temperature on thermoregulation in isolated honeybees (Hymenoptera: Apidae).
Entomologia Generalis 24: 013-021.
- Hrassnigg N., Crailsheim K. (1999):
Metabolic rates and metabolic power of honeybees in tethered flight related to temperature and drag (Hymenoptera:Apidae).
Entomologia Generalis 24: 123-030.
- Leonhard B., Crailsheim K. (1999):
Temperature dependency of the oxygen consumption by a thorax homogenate of worker honeybee (Hymenoptera: Apidae).
Entomologia Generalis 24: 031-036.
- Crailsheim K., Eggenreich U., Ressi R., Szolderits M. (1999):
Temperature preference of honeybee drones (Hymenoptera: Apidae)
Entomologia Generalis 24: 037-047.

Blaschon B., Guttenberger H., Hrassnigg N., Crailsheim K. (1999):
Impact of bad weather on the development of the Broodnest and Pollen Stores in a Honeybee Colony (Hymenoptera: Apidae)
Entomologia Generalis 24: 049-060.

Naiem E.S., Hrassnigg N., Crailsheim K. (1999):
Nurse bees support the physiological development of young bees (*Apis mellifera* L.).
Journal of Comparative Physiology B 169 (4-5), 271-279.

Crailsheim K., Riessberger U., Blaschon B., Hrassnigg N. (1999):
Short-term effect of different weather conditions upon the behaviour of food-storer honeybees during day and night (*Apis mellifera carnica* Pollmann).
Apidologie 30: 299-310.

Leonhard B., Crailsheim K. (1999):
Amino acids and osmolarity in honeybee drone haemolymph
Amino Acids 17: 195-205.

Camazine S., Crailsheim K., Hrassnigg N., Robinson G.E., Leonhard B., Kropf H. (1998):
Protein trophallaxis and the regulation of pollen foraging by honey bees (*Apis mellifera* L.).
Apidologie 29: 113-126.

Crailsheim K. (1998):
Trophallactic interactions in the adult honeybee (*Apis mellifera* L.). Review Article
Apidologie 29: 97-112.

Pfeiffer K., Crailsheim K. (1998):
Drifting of honeybees. *Insectes Sociaux*, 45: 151-167.

Hrassnigg N., Crailsheim K. (1998):
The influence of brood on the pollen consumption of worker bees (*Apis mellifera* L.).
Journal of Insect Physiology 44: 393-404.

Reinprecht K., Hutter-Paier B., Crailsheim K., Windisch M. (1998):
Influence of BDNF and FCS on viability and programmed cell death (PCD) of developing cortical chicken neurons in vitro.
Journal of Neural Transmission-Supplement 53: 373-384.

Gschanev A., Eggenreich U., Windisch M., Crailsheim K. (1998):
Early postnatal stimulation influences passive avoidance behaviour of adult rats.
Behavioural Brain Research 93: 91-98.

Hrassnigg N., Crailsheim K. (1998):
Adaptation of hypopharyngeal gland development to the brood status of honeybee (*Apis mellifera* L.) colonies.
Journal of Insect Physiology 44: 929-939.

Crailsheim K., Leonhard B. (1997):
Amino acids in honeybee worker Haemolymph
Amino Acids 13: 141-153.

- Panzenböck U., Crailsheim K. (1997):
Glycogen in honeybee queens, workers and drones (*Apis mellifera carnica* POLLM)
Journal of Insect Physiology 34: 155-165.
- Berger B., Crailsheim K., Leonhard B. (1997):
Proline, Leucine and Phenylalanine Metabolism in adult honeybee drones (*Apis mellifica carnica* Pollmann)
Insect Biochemistry and Molecular Biology 27: 587-593.
- Riessberger U., Crailsheim K. (1997):
Short-term effect of different weather conditions upon the behaviour of forager and nurse honey bees (*Apis mellifera carnica* Pollmann)
Apidologie 28: 411-426.
- Turunen S., Crailsheim K. (1996):
Lipid and sugar absorption.
in: *Biology of the insect midgut*, M.J. Lehane and P.F. Billingsley ed., Chapman and Hall, London, ISBN 0 412 61670 X.: REVIEW (Book)
- Crailsheim K., Hrassnigg N., Stabentheiner A. (1996):
Diurnal behavioral differences in forager and nurse honey bees (*Apis mellifera carnica* Pollm). *Apidologie* 27 (4): 235-244.
- Lass A., Crailsheim K. (1996):
Influence of age and caging upon protein metabolism, hypopharyngeal glands and trophallactic behavior in the honey bee (*Apis mellifera* L.)
Insectes Sociaux 43: 347-358.
- Visscher K., Crailsheim K., Sherman G. (1996):
How do honey bees fuel their water foraging flights?
Journal of Insect Physiology 42 (12): 1089-1094.
- Sadek M.M., Crailsheim K., Azab S.G. (1996):
The chemosterilizing activity of some mycotoxines and their influence on the development and survival of *Spodoptera littoralis* (Boisd.) (Lep., Noctuidae).
Journal of Applied Entomology 120: 53-61.
- Gschanes A., Eggenreich U., Windisch M., Crailsheim K. (1995):
Effects of postnatal Stimulation on the passive avoidance behaviour of young rats.
Behavioural Brain Research, 70: 191-196
- Klaudiny J., Kulifajova J., Crailsheim K., Simuth J. (1994):
New approach to the Study of division of labour in the honeybee colony (*Apis mellifera* L),
Apidologie, 25: 596-600
- Schneider L.H.W., Eggenreich U., Bernhart E., Pfeiffer K., Rieger R., Steiner K., Trummer P., Crailsheim K. (1994):
Determination of the haemolymph volume of winter honey bees using inulin and polyethylenglycol. *Mitt.dtsch.Ges.Allg.Angew.Ent.* 8: 761-764.

Crailsheim K., Hrassnigg N., Gmeinbauer R., Szolderits M., Schneider L.H.W., Brosch U. (1993):
Pollen utilisation in non-breeding honeybees in winter.
J. Insect Physiol. 39: 369-373.

Gmeinbauer R., Crailsheim K. (1993):
Glucose utilisation during flight of honeybee workers, drones and queens.
J. Insect Physiol. 39: 959-967.

Szolderits M., Crailsheim K. (1993):
A comparison of Pollen consumption and digestion in honeybee (*Apis mellifera carnica*)
drones and workers.
J. Insect Physiol. 39: 877-881.

Crailsheim K., Schneider L.H.W., Hrassnigg N., Bühlmann G., Brosch U., Gmeinbauer R., Schöffmann
B. (1992):
Pollen consumption and utilisation in worker honey bees: dependence on individual age and
function. J. Insect Physiol. 38: 409-419.

Crailsheim K. (1992):
The flow of jelly within a honeybee colony.
J. Comp. Physiol. B 162: 681-689.

Crailsheim K. (1991):
Interadult feeding of jelly in honeybee colonies (*Apis mellifera* L.).
J. Comp. Physiol. B., 171: 55-60.

Omholt S.W., Crailsheim K. (1991):
The possible prediction of the degree of infestation of honeybee colonies (*Apis mellifera*) by
Varroa jacobsoni OUD. by means of its natural death-rate: a dynamic model approach.
Norwegian Journal of Agricultural Sciences 5: 393-400.

Crailsheim K. (1990):
Protein synthesis in the honeybee (*Apis mellifera* L.) and trophallactic distribution of jelly
among imagos in laboratory experiments. Zool. Jb. Physiol 94, 303-312.

Pabst M.A., Crailsheim K. (1990):
The proventriculus of honeybee pupae, workers, drones and queens (*Apis mellifera* L.) Zool.
Jb. Physiol. 94: 271-289.

Crailsheim K. (1990):
The protein balance of the honey bee worker. Review article
Apidologie 21 (5), 417-429.

Haszonits O., Crailsheim K. (1990):
Uptake of L-Leucine into isolated enterocytes of the honeybee (*Apis mellifera* L.) depending
on season. Journal of Insect Physiol. 36: 835-842.

Crailsheim K., Stolberg E. (1989):
Influence of diet, age and colony condition upon intestinal proteolytic activity and size of
hypopharyngeal glands in the honeybee (*Apis mellifera* L.).
Journal of Insect Physiology, 35, 595-602.

- Pabst M.A., Crailsheim K., Moritz B. (1988):
Age dependent histochemical changes in the peritrophic membranes of the honeybee *Apis mellifera* (Hymenoptera: Apidae)
Entomologia Generalis, 14, 1-10
- Crailsheim K. (1988):
Regulation of food passage in the intestine of the honeybee (*Apis mellifera* L.).
Journal of Insect Physiology, 34, 85-90
- Crailsheim K. (1988):
Intestinal transport of sugars in the honeybee (*Apis mellifera* L.).
Journal of Insect Physiology, 34, 839-845
- Crailsheim K. (1988):
Transport of leucine in the alimentary canal of the honeybee (*Apis mellifera* L.) and its dependence on season.
Journal of Insect Physiology, 34, 1093-1100
- Brandstetter M., Crailsheim K., Heran H. (1988):
Provisioning of food in the honeybee before foraging.
In: W. Nachtigall (ed): BIONA-report 6, p 129-148; Akad. Wiss. Mainz, G. Fischer, Stuttgart, New York
- Skalicki N., Heran H., Crailsheim K. (1988):
Water budget of the honeybee during rest and flight.
In: W. Nachtigall (ed): BIONA-report 6, p 103-118; Akad. Wiss. Mainz, G. Fischer, Stuttgart, New York
- Crailsheim K. (1988):
Intestinal transport of glucose during honeybee flight.
In: W. Nachtigall (ed): BIONA-report 6, p 119-128; Akad. Wiss. Mainz, G. Fischer, Stuttgart, New York
- Kunert K., Crailsheim K. (1988):
Seasonal changes in carbohydrate, lipid and protein content in emerging worker honeybees and their mortality. *Journal of Apicultural Research* 27, 13-21
- Kovac H., Crailsheim K. (1988):
Lifespan of *Apis mellifera carnica* Pollm. infested by *Varroa jacobsoni* OUD. in dependence on season and rate of infestation.
Journal of Apicultural Research, 27 (4): 230-238.
- Moritz B., Crailsheim K. (1987):
Physiology of protein digestion in the midgut of the honeybee (*Apis mellifera* L.).
Journal of Insect Physiology, 33, 923-931.
- Crailsheim K. (1986):
Dependence of protein metabolism on age and season in the honeybee (*Apis mellifica carnica* POLLM).
Journal of Insect Physiology 32: 629-634.

Crailsheim K. (1985):

Distribution of haemolymph in the honeybee (*Apis mellifica*) in relation to season, age and temperature.

Journal of Insect Physiology, 31 (9), 629-634.

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