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Eidgenössisches Departement für
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Agroscope
Wettbewerbsfähigkeit und Systembewertung (WFS)

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Mr. Steven Sievert
Chair, ICAR Subcommittee for Recording &
Sampling Devices

Referenz/Aktenzeichen:
Ihr Zeichen:
Unser Zeichen:
Sachbearbeiter/in: umch
Tänikon, December 12th 2018

Application for membership in the ICAR Subcommittee for Recording & Sampling Devices (RDS-SC)

Dear Mr. Sievert,

On behalf of Agroscope, I am gladly supporting the candidacy of Dr. Felix Adrion for the membership in the ICAR Subcommittee for Recording & Sampling Devices.

Felix Adrion is permanently employed as principal investigator at Agroscope. He is responsible for scientific studies in the field of milking technology and smart farming. His duties include knowledge transfer to the dairy farming sector, cooperation with breeding and agricultural technology associations and companies to improve the recording of milk yields on farms and the testing procedures and devices. Thus, Agroscope has great interest in contributing to the work of the RSD-SC by sending Felix Adrion as a member. I am sure that through his profound scientific knowledge in livestock systems engineering and his practical experience in dairy farming he will be a valuable member for the group.

Sincerely,

Christina Umstätter
Research Group Leader 'Automation and Labour Organisation'
Research Division 'Competitiveness and System Evaluation'

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Dr. Felix Adrion

Principal Investigator

Milking Technology and Smart Farming

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CURRICULUM VITAE DR. FELIX ADRION

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Date and place of birth	Feb. 5th 1984, Flensburg, Germany
Nationality	German

Academic Career

Since 11/2018	Principal Investigator Milking technology and Smart Farming, Research Group 'Automation and labour organisation' (Dr. C. Umstätter), Agroscope, Tänikon, Switzerland
08/2014 until 10/2018	Scientific Staff (research and teaching) Precision Livestock Farming, Milking technology, Department of Livestock Systems Engineering, Institute of Agricultural Engineering (apl. Prof. Dr. E. Gallmann, Prof. Dr. T. Jungbluth), University of Hohenheim, Stuttgart, Germany
05/2017 until 07/2017	Guest scientist Precision Livestock Farming, U.S. Meat Animal Research Center (Research Group of Dr. T. M. Brown-Brandl), Clay Center, Nebraska, USA (DAAD Postdoc-fellowship)
11/2012 until 04/2017	PhD Student Department of Livestock Systems Engineering, Institute of Agricultural Engineering, University of Hohenheim (Supervisor: apl. Prof. Dr. E. Gallmann) Title of the dissertation: «Adaption and assessment of a UHF- RFID system for livestock management»
10/2010 until 11/2012	Master Programme Agricultural Sciences, Major in Agricultural Engineering, University of Hohenheim

10/2006 until 08/2009	Bachelor Programme Agricultural Sciences, Major in Agricultural Engineering, University of Hohenheim
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Education and Civil Service

07/2003 until 04/2004	Civil Service at Mürwiker Werkstätten GmbH, Flensburg, Germany Support and supervision of handicapped people on a farm
08/1994 until 06/2003	High school graduation (Abitur) at Bernstorff Gymnasium Satrup, County Schleswig-Flensburg, Germany

Apprenticeship and Internships (excerpt)

01/2010 until 07/2010	Internship at Graakjaer GmbH Agrar- und Industriebau, Gera, Germany, Planning and sales of barns for cattle and swine
08/2009 until 11/2009	Internship at Wrights Bush Dairies, Invercargill, New Zealand, Herdmanagement, milking, feeding of 750 dairy cows
07/2004 until 07/2006	Apprenticeship in farming at the Chamber of Agriculture Schleswig-Holstein, Germany Education in milk production, grow-finish swine and arable farming on two farms

Membership in Expert Groups

02/2018 until 11/2018	German Agricultural Association (DLG); steering committee of the EuroTier-Special „Digital Animal Farming“
04/2017 until 11/2017	Association for Technology and Structures in Agriculture (KTBL); steering committee of an expert talk on monitoring systems for animal husbandry
02/2015 until 12/2015	Association for Technology and Structures in Agriculture (KTBL); steering committee of an expert talk on positioning systems for cattle

Co-supervision of PhD Students (Supervisor apl. Prof. Dr. E. Gallmann)

10/2017 until 11/2018	FÖRSCHNER, ADRIAN; working title: Electronic identification, monitoring and management of pigs using UHF-RFID
04/2016 until 11/2018	KAPUN, ANITA; working title: Prediction models for detection of illnesses in fattening pigs with hotspot monitoring
Since 03/2016	MÜLLER, NICOLE; working title: Conditioning of playing and social behavior of piglets to reduce tail biting

Teaching (Master of Agricultural Sciences)

Year	Course	Hours/week
Since 2014	Milking technology and milking systems	2h
2015-2018	Methods of precision livestock farming	2h
2015-2018	Barn construction and climate	1h

Teaching (Bachelor of Agricultural Sciences)

Year	Course	Hours/week
2014-2017	Planning of livestock housing systems	1,5h

List of publications

Peer-reviewed publications (7)

- 1) Brown-Brandl, T.M.; Adrion, F.; Maselyne, J.; Kapun, A.; Hessel, E.F.; Saeys, W.; Van Nuffel, A.; Gallmann, E. (2018): Review: Three different passive RFID systems for behaviour monitoring in livestock and poultry (in Review)
- 2) ADRION, F.; KAPUN, A.; ECKERT, F.; HOLLAND, E.M.; STAIGER, M.; GÖTZ, S.; GALLMANN, E. (2018): Monitoring trough visits of growing-finishing pigs with UHF-RFID. Computers and Electronics in Agriculture 144, 144-153, DOI: 10.1016/j.compag.2017.11.036
- 3) ADRION, F.; KAPUN, A.; HOLLAND, E.M.; STAIGER, M.; LÖB, P.; GALLMANN E. (2017): Novel approach to determine the influence of pig and cattle ears on the performance of passive UHF-RFID ear tags. Computers and Electronics in Agriculture 140, 168-179, DOI: 10.1016/J.COMPAG.2017.06.004
- 4) HAMMER, N.; PFEIFER, M.; STAIGER, M.; ADRION, F.; GALLMANN, E.; JUNGBLUTH, T. (2017): Cost-benefit analysis of an UHF-RFID system for animal identification, simultaneous detection and hotspot monitoring of fattening pigs and dairy cows. Landtechnik 72 (3), 130-155, DOI: 10.15150/lt.2017.3160
- 5) HAMMER, N.; ADRION, F.; STAIGER, M.; HOLLAND, E.M.; GALLMANN, E.; JUNGBLUTH, T. (2016): Comparison of different ultra-high-frequency transponder ear tags for simultaneous detection of cattle and pigs. Livestock Science 187, 125-137, DOI: 10.1016/j.livsci.2016.03.007
- 6) ADRION, F.; HAMMER, N.; RÖBLER, B.; JEZIERNY, D.; KAPUN, A.; GALLMANN, E. (2015): Development, function and test of a static test bench for UHF-RFID ear tags. Landtechnik 70(3), 46-66, DOI: 10.15150/lt.2015.266
- 7) HAMMER, N.; ADRION, F.; JEZIERNY, D.; GALLMANN, E.; JUNGBLUTH, T. (2015): Methodology of a dynamic test bench to test ultra-high-frequency transponder ear tags in motion. Computers and Electronics in Agriculture 113, 81-92. DOI: 10.1016/j.compag.2015.02.00

Non-reviewed publications (8)

- 1) Adrion, F.; Umstätter, C. (2018): Smart Farming in der Milcheerzeugung. CH-Braunvieh 10/2018 (in print)
- 2) Adrion, F.; Kapun, A.; Förschner, A.; Gallmann, E. (2018): „Toll Collect“ im Schweinestall. TopAgrar 10/2018, S16-S18
- 3) EILERS, U.; LANDWEHR, M.; BERNHARDT, H.; BÜHLER, M.; LARISSA M.; KRAUSE, M.; ADRION, F. (2018): Mit Weidegang geht es doch! Allgäuer Bauernblatt 13/2018, 40-43

- 4) ADRION, F. (2018): Precision Livestock Farming - Wie sieht es in der Praxis aus? DLG-Mitteilungen 1/2018, 72-75
- 5) ADRION, F.; KAPUN, A.; GALLMANN, E. (2017): Smart erkannt. BauernZeitung 39/2017, 36-37
- 6) EILERS, U.; LANDWEHR, M.; BERNHARDT, H.; BÜHLER, M.; LARISSA M.; KRAUSE, M.; ADRION, F. (2017): Melkroboter: Mit Weide sogar mehr Milch. TopAgrar 8/2017, R22-R25
- 7) HAMMER, N.; ADRION, F.; GALLMANN, E. (2013): Automatisierung in der Tierhaltung – Precision Livestock Farming. Landinfo - Informationen für die Landwirtschaftsverwaltung 2/2013, 43-45
- 8) ADRION, F.; THREM, J.; GALLMANN, E.; PFLANZ, W.; JUNGBLUTH, T. (2013): Simulation der Luftströmung in Mastschweineeställen mit unterschiedlicher Zuluftführung. Landtechnik 68(2), 89-94

Conference publications (oral and poster presentations) (26)

- 1) ADRION, F.; BROWN-BRANDL, T.M.; JONES, D.; GALLMANN, E. (2018): Identifying anomalous decreases in feeding time of grow-finish pigs. In: 10th International Livestock Environment Symposium (ILES X). Omaha, Nebraska, USA. September 24-27. American Society of Agricultural and Biological Engineers, St. Joseph, MI.
- 2) BROWN-BRANDL, T.M.; ADRION, F.; GALLMANN, E.; EIGENBERG, R. (2018): Development and validation of a low-frequency RFID system for monitoring grow-finish pig feeding and drinking behavior. In: 10th International Livestock Environment Symposium (ILES X). Omaha, Nebraska, USA. September 24-27. American Society of Agricultural and Biological Engineers, St. Joseph, MI.
- 3) FOERSCHNER, A.; ADRION, F.; GALLMANN, E. (2018): Practical test and evaluation of optimized UHF ear tags for behavior monitoring of fattening pigs. In: 10th International Livestock Environment Symposium (ILES X). Omaha, Nebraska, USA. September 24-27. American Society of Agricultural and Biological Engineers, St. Joseph, MI.
- 4) KAPUN, A.; ADRION, F.; GALLMANN, E. (2018): Activity analysis to detect lameness in pigs with a UHF-RFID system. In: 10th International Livestock Environment Symposium (ILES X). Omaha, Nebraska. September 24-27. American Society of Agricultural and Biological Engineers, St. Joseph, MI.
- 5) Adrion, F.; Kapun, A.; Tomalla, M.; Reger, M.; Gallmann E. (2018): Measuring the walking distance of growing-finishing pigs with UHF-RFID. In: EurAgEng 2018 conference. New engineering concepts for a valued agriculture. July 8-12 Wageningen, The Netherlands.
- 6) Förschner, A.; Adrion, F.; Gallmann, E. (2018): Test of UHF ear tags for growing-finishing pigs on an optimized static test bench. In: EurAgEng 2018 conference. New engineering concepts for a valued agriculture. July 8-12 Wageningen, The Netherlands.

- 7) Kapun, A.; Adrion, F.; Gallmann, E. (2018): Continuous electronic behaviour monitoring of growing-finishing pigs with UHF-RFID. In: EurAgEng 2018 conference. New engineering concepts for a valued agriculture. July 8-12 Wageningen, The Netherlands.
- 8) BERNHARDT, H.; LANDWEHR, M.; BÜHLER, M.; MERZ, L.; KRAUSE, M.; ADRION, F.; BAUERDICK, J.; EILERS, U. (2018): Interaktion von Weidehaltung und AMS im Milchviehbetrieb. In: 14. Tagung Landtechnik im Alpenraum. 11.-12. April, Feldkirch, Österreich
- 9) BERNHARDT, H.; EILERS, U.; LANDWEHR, M.; BÜHLER, M.; MERZ, L.; KRAUSE, M.; ADRION, F.; STEINWIDDER, A.; PLESCH, G.; ALBRECHT, B. (2017): Voraussetzungen und Empfehlungen zum Einsatz von automatischen Melksystemen (AMS) auf Bio-Betrieben mit Weidegang. In: Österreichische Fachtagung für Biologische Landwirtschaft. 9. November, Irdning-Donnersbachtal, Österreich.
- 10) ADRION, F.; KAPUN, A.; ECKERT, F.; GALLMANN, E.; JUNGBLUTH, T. (2017): Vergleich von LF- und UHF-RFID bei der Erkennung von Mastschweinen an einem Beschäftigungsgerät. In: 13. Tagung: Bau, Technik und Umwelt 2017 in der landwirtschaftlichen Nutztierhaltung. 18.-20. September, Stuttgart-Hohenheim, Deutschland. Hg. Kuratorium für Technik und Bauwesen in der Landwirtschaft e. V., Darmstadt, 276-281
- 11) KAPUN, A.; ADRION, F.; TOMALLA, M.; GALLMANN, E.; JUNGBLUTH, T. (2017): Erfassung von Aktivitäts- und Verhaltensmustern von Mastschweinen anhand eines UHF-RFID Systems. In: 13. Tagung: Bau, Technik und Umwelt 2017 in der landwirtschaftlichen Nutztierhaltung. 18.-20. September, Stuttgart-Hohenheim, Deutschland. Hg. Kuratorium für Technik und Bauwesen in der Landwirtschaft e. V., Darmstadt, 210-215
- 12) GÄCKLER, S.; KÜVER, A.; MÜLLER, M.; ADRION, F.; GALLMANN, E.; BÜSCHER, W. (2017): Entwicklung einer Labormethode zur Beurteilung der Zitzenreinigungsleistung von Automatischen Melksystemen. In: 13. Tagung: Bau, Technik und Umwelt 2017 in der landwirtschaftlichen Nutztierhaltung. 18.-20. September, Stuttgart-Hohenheim, Deutschland. Hg. Kuratorium für Technik und Bauwesen in der Landwirtschaft e. V., Darmstadt, 322-327
- 13) EILERS, U.; LANDWEHR, M.; BÜHLER, M.; MERZ, L.; KRAUSE, M.; ADRION, F.; BERNHARDT, H. (2017): Weidegang und stallbasiertes automatisches Melken im ökologischen Landbau. In: 13. Tagung: Bau, Technik und Umwelt 2017 in der landwirtschaftlichen Nutztierhaltung. 18.-20. September, Stuttgart-Hohenheim, Deutschland. Hg. Kuratorium für Technik und Bauwesen in der Landwirtschaft e. V., Darmstadt, 17-22
- 14) KAPUN, A.; ADRION, F.; GALLMANN, E. (2017): Behaviour and activity monitoring of growing-finishing pigs with UHF-RFID. In: Precision Livestock Farming '17. Papers presented at the 8th European Conference on Precision Livestock Farming. Hg. Berckmans, D.; Keita, A., Nantes, Frankreich, im Selbstverlag, 605-613

- 15) BROWN-BRANDL, T.M.; MASELYNE, J.; ADRION, F.; KAPUN, A.; HESSEL, E.F.; SAEYS, W.; VAN NUFFEL, A.; GALLMANN, E. (2017): Comparing three different passive RFID systems for behaviour monitoring in grow-finish pigs. In: Precision Livestock Farming '17. Papers presented at the 8th European Conference on Precision Livestock Farming. Hg. Berckmans, D.; Keita, A., Nantes, Frankreich, im Selbstverlag, 622-631
- 16) KAPUN, A.; ADRION, F.; SCHMID, L.A.; STAIGER, M.; HOLLAND, E.-M.; GALLMANN, E.; JUNGBLUTH, T. (2016): Test of a UHF-RFID system for health monitoring of finishing pigs. In: International Conference on Agricultural Engineering, CIGR - AgEng 2016. Automation, Environment and Food Safety, 26.-29. Juni, Aarhus, Dänemark
- 17) HENNING, K.; GRIMM, H.; ADRION, F.; BECK, A.; GALLMANN, E. (2016): Evaluation of measurement parameters of voluntary milking systems for early warning of mastitis. In: Conference on Precision Dairy Farming, 21.-23. Juni, Leeuwarden, Niederlande
- 18) ADRION, F.; REGER, M.; ECKERT, F.; KAPUN, A.; STAIGER, M.; HOLLAND, E.M.; HAMMER, N.; JUNGBLUTH, T.; GALLMANN, E. (2016): Sektorlokalisation von Mastschweinen mit UHF-RFID. In: Informatik in der Land-, Forst- und Ernährungswirtschaft. Fokus: Intelligente Systeme - Stand der Technik und neue Möglichkeiten. Hg. Ruckelshausen, A.; Meyer-Aurich, A. et al., Bonn, Gesellschaft für Informatik, 17-20
- 19) ADRION, F.; HAMMER, N.; ECKERT, F.; GOETZ, S.; GALLMANN, E. (2015): Adjustment of a UHF-RFID system for hotspot monitoring of fattening pigs. In: Precision Livestock Farming '15. Papers presented at the 7th Conference on Precision Livestock Farming. Hg. Guarino, M.; Berckmans, D., Mailand, Italien, im Selbstverlag, 573-582
- 20) ADRION, F.; HAMMER, N.; LOEB, P.; GALLMANN, E. (2015): Messung des Einflusses von Schweineohren und Gewebeimitaten auf Erkennungsfeld und Signalstärke von UHF-RFID Ohrmarken. In: 12. Tagung: Bau, Technik und Umwelt 2015 in der landwirtschaftlichen Nutztierhaltung. 8.-10. September 2015, Freising, Deutschland. Hg. Kuratorium für Technik und Bauwesen in der Landwirtschaft e. V., Darmstadt, Kuratorium für Technik und Bauwesen in der Landwirtschaft, 98-103
- 21) HAMMER, N.; ADRION, F.; HOLLAND, E.M.; STAIGER, M.; GALLMANN, E.; JUNGBLUTH, T. (2015): Simultaneous detection of cattle by using an UHF-RFID system. In: Precision Livestock Farming '15. Papers presented at the 7th Conference on Precision Livestock Farming. Hg. Guarino, M.; Berckmans, D., Mailand, Italien, im Selbstverlag, 119-127
- 22) HAMMER, N.; ADRION, F.; HOLLAND, E.M.; STAIGER, M.; GALLMANN, E.; JUNGBLUTH, T. (2015): Treibeversuche zur simultanen Einzeltiererkennung von Rindern mithilfe eines UHF RFID-Systems. In: 12. Tagung: Bau, Technik und Umwelt 2015 in der landwirtschaftlichen

Nutztierhaltung. 8.-10. September, Freising, Deutschland. Hg. Kuratorium für Technik und Bauwesen in der Landwirtschaft e. V., Darmstadt, 110-115

- 23) ADRION, F.; HAMMER, N.; RÖßLER, B.; JEZIERNY, D.; GALLMANN, E. (2014): An automated static test bench for UHF-RFID ear tags. In: International Conference of Agricultural Engineering 2014, European Society of Agricultural Engineers (EurAgEng), 6.-10. Juli, Zürich, Schweiz
- 24) HAMMER, N.; ADRION, F.; JEZIERNY, D.; GALLMANN, E.; JUNGBLUTH, T. (2014): Influence of different setups of a dynamic test bench on the readability of UHF-transponders. In: International Conference of Agricultural Engineering 2014, European Society of Agricultural Engineers (EurAgEng), 6.-10. Juli, Zürich, Schweiz
- 25) ADRION, F.; THREM, J.; GALLMANN, E.; PFLANZ, W.; JUNGBLUTH, T. (2013): Simulation der Luftströmung in einem Mastschweinestall mit Unterflurzuluftführung. In: 11. Tagung: Bau, Technik und Umwelt in der landwirtschaftlichen Nutztierhaltung. 24.-26. September, Vechta, Deutschland. Hg. Kuratorium für Technik und Bauwesen in der Landwirtschaft e. V., Darmstadt, 200-205
- 26) HAMMER, N.; ADRION, F.; GALLMANN, E.; JUNGBLUTH, T. (2013): Untersuchungen zur Lesbarkeit von UHF-Transponderohrmarken auf einem Prüfstand und in der Praxis. In: 11. Tagung: Bau, Technik und Umwelt in der landwirtschaftlichen Nutztierhaltung. 24.-26. September, Vechta, Deutschland. Hg. Kuratorium für Technik und Bauwesen in der Landwirtschaft e. V., Darmstadt, 348-353

Speeches (2)

- 1) Adrion, F. (2018): Keynote speech „Digital Animal Farming“, DLG e.V. EuroTier-Special „Digital Animal Farming“, Hannover, 15. und 16.11.2018
- 2) ADRION, F. (2014): Elektronische Tierkennzeichnungssysteme auf Basis ultrahochfrequenter Radio-Frequenz-Identifikation (UTE), Projektvorstellung im Rahmen der BLE Innovationstage 2014, Bonn, 15.-16.10.2014

Peer-Review for scientific journals

Journals: IEEE Transactions on Industrial Electronics, Transactions of the ASABE, Landtechnik – Agricultural Engineering, Journal of the Mechanical Behavior of Biomedical Materials