

Curriculum vitae

Philipp Aebi, from Seeberg (BE) and Morat (FR), married

6 - 29 - 1960 Born in Murten (Switzerland).

1967 - 1976 Primary and Secondary School in Murten.

1976 - 1979 Maturität C, Collège St. Michel Fribourg.

1979 - 1985 Study of physics at the "Eidgenössische Technische Hochschule Zürich" (ETHZ).

1985 Physics degree (MS), "Diplomarbeit" at the Institut für Angewandte Physik, ETHZ, with PD Dr. M. Erbudak and Prof. G. Kostorz: "Feinstrukturanalyse der Elektronenenergieverlustspektren von amorphem und polykristallinem Ni" ("Analysis of the fine structure in the electron energy loss spectra of amorphous and polycrystalline Ni").

1985 - 1989 Doctoral Thesis at the Institut für Angewandte Physik, ETHZ, with PD Dr. M. Erbudak and Prof. G. Kostorz: Experimental and Theoretical Study of Scattering State Fine Structures Observed in Secondary Electron Spectroscopy from Solid Surfaces, Diss, ETH Nr. 8994.

1989 - 1992 Postdoctoral Fellow, McMaster University, Canada, with Prof. A.P. Hitchcock: Electron energy loss spectroscopy and synchrotron x-ray absorption spectroscopy at CHESS, Cornell University, and in Madison at SRC.

1992 - 1994 Postdoctoral Fellow, Institut de Physique, Université de Fribourg, with Prof. L. Schlapbach and Prof J. Osterwalder: Photoelectron spectroscopy on High T_c superconductors (supported by the NFP30).

1994 - 1996 Maître-Assistant, Institut de Physique, Université de Fribourg, with Prof. L. Schlapbach: Angle-resolved photoelectron spectroscopy (angle-scanned photoemission: Fermi surface mapping in the UV regime / photoelectron diffraction for structural investigation in the x-ray regime).

1995 Türler-Reeb-Preis 1995, Université de Fribourg

1996 "Habilitation" (Venia legendi), in experimental physics, Université de Fribourg

1996 - 1998 "Profil" Fellowship from the Fonds National Suisse; working at the Institut de Physique, Université de Fribourg.

1998 - 2002 Prof. Associé at the Institut de Physique, Université de Fribourg.

2002 - 2008 Prof. Ordinaire at the Institut de Physique, Université de Neuchâtel.

2007 - 2008 Director of the Institut de Physique, Université de Neuchâtel.

2009 - 2020 Prof. Ordinaire at the Département de Physique, Université de Fribourg.

2014 - 2018 President of the Département de Physique, Université de Fribourg.

List of publications

<http://physics.unifr.ch/fr/page/169>

Peer-reviewed articles:

140. C. Battaglia, K. Gaál-Nagy, C. Didiot, C. Monney, E.F. Schwier, M.G. Garnier, G. Onida, P. Aebi:
Elementary structural building blocks encountered in silicon surface reconstructions.
J. Phys.: Condens. Matter 21, 013001 (2009).
141. C. Monney, H. Cercellier, F. Clerc, C. Battaglia, E.F. Schwier, C. Didiot, M.G. Garnier, H. Beck, P. Aebi, H. Berger, L. Forro, L. Patthey:
Spontaneous excitonic condensation in 1T-TiSe₂: a BCS-like approach.
Phys. Rev. B 79, 045116 (2009) (11 pages).
142. C. Battaglia, K. Gaál-Nagy, C. Monney, C. Didiot, E.F. Schwier, M.G. Garnier, G. Onida, P. Aebi:
New Structural Model for the Si(331)-(12x1) Surface Reconstruction.
Phys. Rev. Lett. 102, 066102 (2009).
143. A. Scheybal, K. Müller, R. Bertschinger, M. Wahl, A. Bendounan, P. Aebi, and T. A. Jung:
Modification of the Cu(110) Shockley surface state by an adsorbed pentacene monolayer.
Phys. Rev. B 79, 115406 (2009) (6 pages).
144. C. Monney, H. Cercellier, C. Battaglia, E.F. Schwier, C. Didiot, M.G. Garnier, H. Beck, P. Aebi:
Temperature dependence of the excitonic insulator phase model in 1T-TiSe₂.
Physica B 404, 3172–3175 (2009).
145. C. Battaglia, G. Onida, K. Gaál-Nagy, P. Aebi:
Structure and stability of the Si(331)-(12x1) surface reconstruction investigated with first-principles density functional theory.
Phys. Rev. B 80, 214102 (2009) (8 pages).
146. Marion Heckenroth, Antonia Neels, Michael G. Garnier, Philipp Aebi, Andreas W. Ehlers, Martin Albrecht:
On the Electronic Impact of Abnormal C4-Bonding in N-Heterocyclic Carbene Complexes.
Chem. Eur. J. 10, 9375-9386 (2009).
147. C. Battaglia, C. Monney, C. Didiot, E.F. Schwier, N. Mariotti, M.G. Garnier, P. Aebi:
Atomically precise Si(331)-(12x1) surfaces.
AIP Conf. Proc. 1199, 5 (2010).
148. C. Monney, E. F. Schwier, M. G. Garnier, N. Mariotti, C. Didiot, H. Beck, P. Aebi, H. Cercellier, J. Marcus, C. Battaglia, H. Berger, and A. N. Titov:
Temperature dependent photoemission on 1T-TiSe₂: Interpretation within the

- exciton condensate phase model.
Phys. Rev. B 81, 155104 (2010).
149. C. Monney, E.F. Schwier, M.G. Garnier, N. Mariotti, C. Didiot, H. Cercellier, J. Marcus, H. Berger, A.N. Titov, H. Beck, P. Aebi:
Probing the exciton condensate phase in 1T -TiSe₂ with photoemission.
New J. Phys. 12, 125019 (2010).
 150. C. Monney, E.F. Schwier, M.G. Garnier, C. Battaglia, N. Mariotti, C. Didiot, H. Cercellier, J. Marcus, H. Berger, A.N. Titov, H. Beck, P. Aebi:
Dramatic effective mass reduction driven by a strong potential of competing periodicity.
EPL 92, 47003 (2010).
 151. Corsin Battaglia, Eike Fabian Schwier, Claude Monney, Clément Didiot, Nicolas Mariotti, Katalin Gaál-Nagy, Giovanni Onida, Michael Gunnar Garnier, and Philipp Aebi:
Valence band structure of the Si(331)-(12x1) surface reconstruction.
J. Phys.: Condens. Matter 23, 135003 (2011).
 152. C. Monney, C. Battaglia, H. Cercellier, P. Aebi and H. Beck:
Exciton condensation driving the periodic lattice distortion in 1T-TiSe₂.
Phys. Rev. Lett. 106, 106404 (2011).
 153. E.F. Schwier, C. Monney, N. Mariotti, Z. Vydrova, M. García-Fernández, C. Didiot, M.G. Garnier, and P. Aebi:
Influence of elastic scattering on the measurement of core-level binding energy dispersion in X-ray photoemission spectroscopy.
Eur. Phys. J. B 81, 399-403 (2011).
 154. M. Cazzaniga, H. Cercellier, M. Holzmann, C. Monney, P. Aebi, G. Onida, and V. Olevano:
Ab initio many-body effects in TiSe₂: A possible excitonic insulator scenario from GW band-shape renormalization.
Phys. Rev. B 85, 195111 (2012).
 155. N. Mariotti, C. Didiot, E.F. Schwier, C. Monney, L.-E. Perret-Aebi, C. Battaglia, M.G. Garnier, P. Aebi:
Scanning tunneling microscopy at multiple voltage biases of stable “ring-like” Ag clusters on Si(111)-(7x7).
Surf. Sci. 606, 1755-1759 (2012).
 156. C. Monney, G. Monney, P. Aebi, H. Beck:
Electron-hole fluctuation phase in 1T-TiSe₂.
Phys. Rev. B 85, 235150 (2012).
 157. C. Monney, K.J. Zhou, H. Cercellier, Z. Vydrova, M.G. Garnier, G. Monney, V.N. Strocov, H. Berger, H. Beck, T. Schmitt, P. Aebi:
Mapping of Electron-Hole Excitations in the Charge-Density-Wave System 1T-TiSe₂ Using Resonant Inelastic X-Ray Scattering.
Phys. Rev. Lett. 109, 047401 (2012).

158. C. Monney, G. Monney, P. Aebi, H. Beck:
Electron-hole instability in $1T$ -TiSe.
New J. Phys. 14, 075026 (2012).
159. E. F. Schwier R. Scherwitzl, Z. Vydrova, M. Garcıa-Fernandez, M. Gibert, P. Zubko, M.G. Garnier, J.-M. Triscone, P. Aebi:
Unusual temperature dependence of the spectral weight near the Fermi level of NdNiO₃ thin films.
Phys. Rev. B 86, 195147 (2012).
160. D. Moser, M.G. Garnier, L. Karvonen, A. Shkabko, P. Aebi and A. Weidenkaff:
Reversible Control of the Electronic Density of States at the Fermi Level of Ca₃Co₄O_{9.6} Misfit-Layered Oxide Single Crystals through O / H Plasma Exposure.
Journal of Materials Science 48, 2823-2828 (2013).
161. C. Sanchez-Sanchez, M.G. Garnier, P. Aebi, M. Blanco-Rey, P.L. de Andres, J.A. Martın-Gago, M.F. Lopez:
Valence band electronic structure characterization of the rutile TiO₂ (110)-(1x2) reconstructed surface.
Surf. Sci. 608, 92–96 (2013).
162. B. Hildebrand, C. Didiot, A. M. Novello, G. Monney, A. Scarfato, A. Ubaldini, H. Berger, D. R. Bowler, C. Renner, and P. Aebi:
Doping Nature of Native Defects in $1T$ -TiSe.
Phys. Rev. Lett. 112, 197001 (2014).
163. T. Jaouen, P. Aebi, S. Tricot, G. Delhaye, B. Lepine, D. Sebilleau, G. Jezequel, P. Schieffer:
Induced Work Function Changes at Mg-doped MgO / Ag(001) Interfaces: a Combined Auger Electron Diffraction and Density Functional Study.
Phys. Rev. B 90, 125433 (2014).

G. Monney, C. Monney, B. Hildebrand, P. Aebi, H. Beck:
Impact of electron-hole correlations on the $1T$ -TiSe₂ electronic structure.
Phys. Rev. Lett., submitted.

E. Razzoli, C. Matt, M. Kobayashi, X.-P. Wang, A. van Roekeghem, S. Biermann, N. C. Plumb, M. Radovic, V. Strocov, C. Capan, Z. Fisk, P. Richard, H. Ding, P. Aebi, J. Mesot, and M. Shi:
Tuning the Strength of Electronic Correlations in Transition Metal Pnictides: Chemistry beyond the Valence Count.
Nat. Comm., submitted.

Z. Vydrova, E. F. Schwier, G. Monney, C. Monney, E. Razzoli, T. Jaouen, C. Didiot, B. Hildebrand, H. Berger, V. Strocov, F. Vanini, P. Aebi:
Spin Orbit Interaction and band-renormalization effects in $1T$ -TiSe.
To be submitted.

T. Jaouen, C. Didiot, E. Razzoli, G. Monney, B. Hildebrand, F. Vanini, M.

Muntwiler, and P. Aebi:

Nature of a metal-supported ultra-thin oxide film probed by layer-resolved resonant Auger spectroscopy.

To be submitted.

Anna Novello, Baptiste Hildebrand, Alessandro Scarfato, Clément Didiot, Gaël Monney, Helmuth Berger, Alberto Ubaldini, David R. Bowler, Philipp Aebi
Christoph Renner:

Effects of native defects on the Charge Density Wave in $1T$ -TiSe₂.

To be submitted.