

Dr. Jean-Baptiste Vincent

DLR Institute of Planetary Research

☎ +49-159-0294-8856

✉ jean-baptiste.vincent@dlr.de

www.comet-toolbox.com/vincent

Education

- 2003 **B.Sc. in Physics**, *Université Paul Sabatier (UPS)*, Toulouse, France, Thesis: *Mars atmosphere and surface composition measurements with gamma spectrometry*.
- 2005 **M.Sc. in Astrophysics and Planetology**, *UPS*, France, Thesis: *X-ray spectrometry of the Moon surface*.
- 2006 **M.Sc. in Space Engineering and Instrumentation**, *UPS*, France, Thesis: *Application of radar interferometry to the study of a local subsidence*.
- 2010 **PhD**, *TU Braunschweig*, Germany, Thesis: *From observations and measurements to realistic modeling of cometary nuclei*. Grade: "Sehr Gut Bestanden".

Professional Experience

- 2010-2016 **Post-doctoral researcher**, *MPI for Solar System Research*, Göttingen, Germany.
- since 2016 **Researcher**, *DLR Institute of Planetary Research*, Berlin, Germany.
- Responsibilities
 - **Co-Investigator** and **Science Planning Lead** for the OSIRIS camera suite (ESA's Rosetta). **Coordinator** of the working group on *Cometary Activity* for this instrument.
 - **Associate scientist** with NASA's Dawn mission.
 - **Leader** of an ISSI international team (Collisions in the Early Outer Solar System).
 - **Co-Investigator** on NASA's CAESAR (New Frontier Comet Sample Return proposal). **Deputy-PI** of the camera suite.
 - **Co-Investigator** on the AIDA project (missions DART+Hera), Hera's **chair of the Data Analysis Working Group**, and **Principal Investigator** of the Asteroid Framing Camera.
 - Near-Environment **Science Theme Lead** for ESA's Comet Interceptor mission. **Co-Investigator** on the CoCa instrument.
 - Small bodies **Programme Group Coordinator** for the Europlanet Science Congress.

Research interest: active processes on small bodies

- Comets Active processes in ground and space based observations, modeling of activity at various scales, link to physical and morphological properties of cometary nuclei.
- Asteroids Study of impacts, crater morphology, physical and mechanical properties. Theoretical work on defining better scaling laws to describe cratering processes on small bodies.
- Formation/
Evolution Modeling and theoretical work on relating current observations of small bodies to general models of Solar System formation and evolution processes.

Awards

- 2010 **A&A highlight** for the paper "Numerical model of cometary dust coma structures".
- 2013 **NASA award** for my scientific contribution to the Dawn mission.
- 2017 **NCU-Delta Young Astronomer Lectureship Award** for "outstanding achievements in astronomy research", National Central University of Taiwan.
- 2017 **ESA Award** for "outstanding contribution to the Rosetta mission".
- 2018 **Outstanding Reviewer** title awarded by the journals *Icarus* and *PSS*.
- 2021 **Asteroid 34846 Vincent** named by the *IAU*.

Teaching & Mentoring Experience

- 2002-2005 **Teaching assistant in mathematics and physics for middle school students.**
- 2008-2014 **Planetary science lectures for Master and PhD, TU Braunschweig & Uni. Physics Göttingen,** Cometary science; Remote sensing techniques; Solar System dynamics; Impacts, craters, and regolith formation; Image processing techniques.
- 2012-2016 **Supervision of a PhD thesis on "Thermal properties of cometary active regions", IMPRS & TU Braunschweig,** 3 articles published by my student.
- 2015-2016 **Supervision of a Bachelor thesis on "Long-term Monitoring of Cometary Jets with the Rosetta Mission", Uni. Göttingen,** 1 article published by my student.
- May 2017 **Series of lectures on comets and asteroids, National Central University Taiwan, National Dong Hwa University Taiwan.**
- 2021-2024 **Lectures on Pluto, Comets and outer Solar System objects, TU Berlin.**

Additional information

- Date of birth 30 May 1983, Toulouse, France
- Languages French (native), English (fluent), German and Spanish (good)
- Computer skills Daily usage of Windows and Unix, large experience in programming (C, Python, Matlab, Java, HTML, Javascript, PHP/MySQL, MIDAS)
- Hobbies Music, scuba diving (CMAS 3*), programming, origami, reading

Selected list of 10 first author scientific publications

*Note: I have coauthored 160+ peer-reviewed articles, **13 as first author**. My **h-index is 57**, with a total citation count > 11k (Sources: NASA ADS, Google Scholar). I have presented my work at **45 international conferences**, including **17 invited talks**.*

- 10 Vincent et al, *Local manifestations of cometary activity*, SSR (2020)
- 9 Vincent et al, *Constraints on cometary surface evolution derived from a statistical analysis of 67P's topography*, MNRAS (2017)
- 8 Vincent et al, *Summer fireworks on comet 67P*, MNRAS (2016)
- 7 Vincent et al, *Are fractured cliffs the source of cometary dust jets? insights from OSIRIS/Rosetta at 67P*, A&A (2016)
- 6 Vincent et al, *Large heterogeneities in comet 67P as revealed by active pits from sinkhole collapse*, Nature (2015)
- 5 Vincent et al, *Craters on comets*, PSS (2015)
- 4 Vincent et al, *Crater Depth/Diameter Distribution and Surface Properties of (4) Vesta*, PSS (2014)
- 3 Vincent et al, *Spin and activity of comet 67P/Churyumov-Gerasimenko*, A&A (2013)
- 2 Vincent et al, *A numerical model of cometary dust coma structures: application to comet 9P/Tempel 1*, A&A (2010)
- 1 Vincent et al, *Coma structures in comet 73P/Schwassmann-Wachmann 3, components B and C, between January and May 2006*, Earth Moon and Planets (2010)

The complete list of all my co-authored publications is available at
<https://scholar.google.de/citations?hl=en&user=II0ZfsAAAAJ>