

## JÉRÉMY FENSCH

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### RESEARCH EXPERIENCE

- 2019-present**            **ENS de Lyon, Centre de Recherche Astrophysique de Lyon, France**  
Tenured Associate Professor (*Maitre de Conférences*)
- 2017-2019**            **European Southern Observatory, Garching bei München, Germany**  
ESO Fellow, Astronomer-on-duty, APEX Telescope (25% of time)
- 2014-2017**            **Laboratoire AIM, CEA-Saclay/IRFU/SAp, Université Paris-Diderot, France**  
PhD student in the Cosmology and Galaxy Evolution group.  
*“Star and stellar cluster formation in gas-dominated galaxies”*  
Defended in Saclay, September the 28<sup>th</sup>, 2017
- 2013**                    **European Southern Observatory, Santiago de Chile, Chile**  
4-month M1 research internship in the Globular Clusters research group.

### TEACHING

- 2014-2016**            **ENS de Lyon, Physics Department**  
Tenured associate Professor. Total teaching time: 192h per year  
L3/M1/M2 + preparation for teaching entrance examination (*agrégation*)
- 2014-2016**            **Université Paris-Diderot, Paris 7**  
Teaching Assistant (L1, L2). Total teaching time: 123h over 2 years

### EDUCATION

- 2013-2014**            **University of Cambridge, UK**  
*Part iii of Mathematical Tripos*: Master of Advanced Studies in Applied  
Mathematics and Theoretical Physics. Astrophysics track.  
Passed with distinction.
- 2010-2014**            **École polytechnique, Palaiseau, France**  
Top French university for science and engineering.  
Theoretical Physics and Astrophysics. GPA = 3.94.

### GRANTS AND AWARDS

- 2019**                    PI of an IMPULSION grant, Université de Lyon: 57 k€  
PI of a CNRS mission fund: 5 k€
- 2017**                    ESO Fellowship, ESO Garching: 200 k€  
RadioNet funding for scientific conferences: 2 k€

## TIME ALLOCATIONS

### CPU time:

<b>2020</b>	<b>PI of a PRACE project: 20Mh on Joliot-Curie Rome (valorisation: 240 k€)</b> <b>PI of a GENCI project: 2.2Mh on various supercomputers (valorisation: 26.4 k€)</b>
<b>2019</b>	<b>PI of a GENCI project: 1Mh on Jean Zay CPU (valorisation: 12.7 k€)</b> Co-I of a GENCI project: 5Mh on various supercomputers (PI: F. Bournaud)
<b>2018</b>	Co-I of a GENCI project: 12Mh on various supercomputers (PI: F. Bournaud) Co-I of an Excellence Cluster project: 3 Mh on SuperMUC (PI: E. Emsellem)
<b>2017</b>	Co-I of a GENCI project: 8Mh on various supercomputers (PI: F. Bournaud)
<b>2016</b>	Co-I of a GENCI project: 11.1M hours on the Curie supercomputer (PI: F. Bournaud)
<b>2015</b>	Co-I of a PRACE project: 21.8M hours on the Curie supercomputer (PI: F. Renaud)

### Telescope time:

<b>2020</b>	Co-I of a HST project, Snapshot program (PI: Marleau) Co-I of a HST project: 8 orbits (Cycle 27, PI: Müller)
<b>2018</b>	Co-I of a MUSE project: 12h (P103, PI: F. Marleau) Co-I of a MUSE project: 4h (P102, PI: A. Zanella) Co-I of an ALMA project: 14.4h (Cycle 6, PI: A. Zanella) Co-I of a MUSE project: 8.4h (DDT, PI: E. Emsellem)
<b>2017</b>	<b>PI of a MUSE project: 16h (P99)</b>
<b>2016</b>	Co-I of a HST/WFC3 project: 8 orbits (Cycle 24, PI: P.-A. Duc)
<b>2015</b>	Co-I of a MUSE project: 2.7h (P97, PI: M. Boquien)

## STUDENT SUPERVISION

### PhD:

<b>2018-2022</b>	<b>Baptiste Faure</b> (Laboratory AIM CEA-Saclay, University Paris 7) <i>'Physics of star forming regions in primordial galaxies'</i> Co-supervision with F. Bournaud and E. Daddi (CEA).
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### Bachelor/Master:

<b>2020</b>	<b>Marlysa Vivier</b> (L3, ENS de Lyon) <i>'Probing the effects of initial conditions on idealised disk simulations'</i>
<b>2019</b>	<b>Aisha Bachmann</b> (M1, ESO Summer School, Univ. Bochum) <i>'Understanding galaxy formation mechanisms at their ghostly extremes'</i>

## SERVICES

Referee for A&A, ApJ and for GENCI super-computer time allocations (CT4: Astrophysics)

<b>2019</b>	Co-Chair of Knowledge Exchange Series, weekly meeting at ESO, aimed at creating interactions and share expertises.
<b>2018</b>	SOC+LOC member of the meeting "Galaxy mergers across cosmic time" 50 participants, Sexten, Italy
<b>2016-2017</b>	Chair of the <i>Astromind</i> , a fortnightly cross-field scientific meeting in the Cosmology & Galaxy Evolution and Star Formation groups.
<b>2016-2017</b>	Chair of the weekly astro-ph Journal Club for the Cosmology & Galaxy Evolution group.

## CONFERENCES & SEMINARS

- [Talk]\* MIAPP workshop, Munich, Germany, **POSTPONED TO 2022**
- [Courses]\* Cosmology Summer school, Krakow, Poland, **POSTPONED TO 2021**
- [Talk]\* Extreme Galaxies and Environments, Reykjavik, Iceland, **POSTPONED TO 2021**
- [Seminar] Remote Seminar, NSBJ, Warsaw, Poland, Jun. 2020
- [Seminar] General physics seminar, ENS de Lyon, France, Sep. 2019
- [Course] Principles of numerical astrophysics, ESO Summer School, Garching, Germany, Jul. 2019
- [Seminar] Séminaire café-club, LAM, Marseille, France, Jun. 2019
- [Talk] Baryons inside and outside of galaxies, Tehran, Iran, Feb. 2019
- [Seminar] Séminaire, CRAL, Lyon, France, Feb. 2019
- [Seminar] Visitor Talk + Technical Astro Seminar, Lund, Sweden, Sep 2018
- [Talk] RAMSES User Meeting, Lyon, France, Sep 2018
- [LOC+SOC] Galaxy Mergers across Cosmic Time, Sexten, Italy, Mar 2018
- [Seminar] Gas Matters, MPE/MPA/ESO, Garching, Germany, Mar 2018
- [Talk] RAMSES User Meeting, Nice, France, Sep 2017
- [Talk] Star Formation in Different Environments, Qui Nhon, Vietnam, Aug 2017
- [Talk] SF2A meeting: Galaxy Decadence, Theory and Observations, Paris, Jul 2017
- [Invited] Globular Cluster Systems and their Host Galaxies, Sexten, Italy, Jun 2017
- [Talk] RAMSES User Meeting, Paris, France, Oct 2016
- [Talk] Galaxy Workshop, Santa Cruz, USA, Aug 2016
- [Talk] The Role of Feedback in the Formation of Star Clusters, Sexten, Italy, Jul 2016
- [Seminar] Star Formation Seminar, Saclay, France, Apr 2016
- [Seminar] Visitor Talk, University of Surrey, Guildford, UK, Nov 2015
- [Poster] Satellites and Streams, Santiago, Chile, Apr 2015
- [Talk] NGVS Meeting, Victoria, Canada, Sep 2014

## PUBLICATIONS

### **First Author [6 + 1 subm.]:**

#### **The role of gas fraction and feedback in the stability and evolution of galactic disks: Implications for cosmological models of galaxy formation**

***Fensch J.*** & *Bournaud F.*

2020, submitted to MNRAS, arXiv:2011.12966

#### **Revealing the formation mechanism of the shell galaxy NGC474 with MUSE**

***Fensch J.***, *Duc P.-A.*, *Lim S.*, *Emsellem E.*, *Bilek M.*, *Durrell P.*, *Liu C.*, *Peng E.*, *Smith R.*

2020, accepted for publication in A&A, arXiv:2007.03318

#### **Massive star cluster formation and evolution in tidal dwarf galaxies**

***Fensch J.***, *Duc P.-A.*, *Boquien M.*, *Elmegreen D. M.*, *Elmegreen B. G.*, *Bournaud F.*, *Brinks E.*, *de Grijs R.*, *Lelli F.*, *Renaud F.* & *Weilbacher P.M.*

2019, A&A, 628, 60

#### **The ultra-diffuse galaxy NGC 1052-DF2 with MUSE: II. The population of DF2: stars, clusters and planetary nebulae**

***Fensch, J.*** *van der Burg, R. F. J.*; *Jerabkova, T.*, *Emsellem, E.*, *Zanella, A.*, *Agnello, A.*, *Hilker, M.*, *Mueller, O.*, *Rejkuba, M.*, *Duc, P.-A.* *Durrell, P.*, *Habas, R.*, *Lim, S.*, *Marleau, F. R.*; *Peng, E.* and *Sanchez Janssen, R.*

2019, A&A, 625, 77

**High-redshift major mergers weakly enhance star formation.**

**Fensch J.**, Renaud F., Bournaud F., Duc P.-A., Agertz O., Amram P., Combes F., Di Matteo P., Elmegreen B., Emsellem E., Jog C. J., Perret V., Struck C. and Teyssier R.  
2017, MNRAS, 465, 1943

**Ionization processes in a local analogue of distant clumpy galaxies: VLT MUSE IFU spectroscopy and FORS deep images of the TDG NGC 5291N.**

**Fensch J.**, Duc P.-A., Weilbacher P., Boquien M. & Zackrisson E.  
2016, A&A, 585, 79

**The colour–magnitude relation of globular clusters in Centaurus and Hydra.**

**Fensch J.**, Mieske S., Müller-Seidlitz J. & Hilker M.  
2014, A&A, 567, 105

**Major contribution [4 +1 subm.]:**

**Hierarchical fragmentation in high redshift galaxies revealed by hydrodynamical simulations**

Faure B., Bournaud F., **Fensch J.**, Daddi E., Behrendt M., Burkert A. & Richard J.  
Submitted to MNRAS

**Merger induced clump formation in distant infrared luminous starburst galaxies**

Calabrò A., Daddi E., **Fensch J.**, Bournaud F., Cibinel A., Puglisi A., Jin S. and Delvecchio I.  
2019, A&A, 632, 98

**The ultra-diffuse galaxy NGC 1052-DF2 with MUSE: I. Kinematics of the stellar body**

Emsellem, E., van der Burg, R. F. J.; **Fensch, J.**; Jerabkova, T., Zanella, A., Agnello, A., Hilker, M., Mueller, O., Rejkuba, M., Duc, P.-A. Durrell, P., Habas, R., Lelli F., Lim, S., Marleau, F. R.; Peng, E. and Sanchez Janssen, R.  
2019, A&A, 625, 76

**On the SFR-stellar mass main sequence archetypal star-formation history and analytical models**

Ciesla L., Elbaz D. and **Fensch J.**  
2017, A&A, 608, 41

**Globular clusters as tracers of fine structure in the dramatic shell galaxy NGC 474.**

Lim S., Peng E.W., Duc P.-A., **Fensch J.**, Durrell P. R., Harris W. E., Cuillandre J.-C., Gwyn S., Lançon A. & Sanchez-Janssen R.  
2017, ApJ, 835, 123

**Collaborations [8]:**

**A titanic interstellar medium ejection in a massive starburst galaxy at  $z=1.4$**

Puglisi A., Daddi E., Brusa M., Bournaud F., **Fensch J.**, +11  
2020, Accepted for publication in Nature Astronomy

**A spectroscopic study of MATLAS-2019 with MUSE: an ultra-diffuse galaxy with an excess of old globular clusters**

Müller O., Marleau F., Duc P.-A., Habas R. **Fensch J.**, +8  
2020, A&A in press. arXiv:2006.04606

**Spatial Segregation of Massive Clusters in Dwarf Galaxies**

Bruce G. Elmegreen, A. Adamo, M. Boquien, F. Bournaud, D. Calzetti, D. O. Cook, D.A. Dale, P.-A. Duc, D. M. Elmegreen, **J. Fensch**, K. Grasha, Hwi Kim, L. Kahre, M. Messa, J. E. Ryon, E. Sabbi, L.J. Smith  
2020, ApJL, 88, 27

**Newly discovered dwarf galaxies in the MATLAS low density fields**

Habas R., Marleau F., Duc P.-A., Durrell P., Paudel S., Poulain M., Sánchez-Janssen R., Sreejith S., Ramasawmy J., Stemock B., Leach C., Cuillandre J.-C., Gwyn S., Agnello A., Bilek M., **Fensch J.**, Müller O., Peng E. & van der Burg R. F. J.  
2020, MNRAS, 491, 1901

**A contribution of star-forming clumps and accreting satellites to the mass assembly of  $z \sim 2$  galaxies**  
*Zanella, A.; Le Floch, E.; Harrison, C. M.; Daddi, E.; Bernhard, E.; Gobat, R.; Strazzullo, V.; Valentino, F.; Cibinel, A.; Almeida, J. Sánchez; Kohandel, M.; Fensch, J.; Behrendt, M.; Burkert, A.; Onodera, M.; Bournaud, F.; Scholtz, J.*  
2019, MNRAS, 489, 2792

**A tidal tale: detection of multiple stellar streams in the environment of NGC 1052**  
*Müller O., Rich M., Roman J., Yıldız M., Bilek M., Duc P.-A., Fensch J., Trujillo I. & Koch A.*  
2019, A&A, 624, 6

**Concurrent Starbursts in Molecular Gas Disks within a Pair of Colliding Galaxies at  $z = 1.52$**   
*Silverman, J. D.; Daddi, E.; Rujopakarn, W.; Renzini, A.; Mancini, C.; Bournaud, F.; Puglisi, A.; Rodighiero, G.; Liu, D.; Sargent, M.; Arimoto, N.; Béthermin, M, Fensch, J. +10*  
2018, ApJ, 868, 75

**Morphology and enhanced star formation in a Cartwheel-like ring galaxy**  
*Renaud, F., Athanassoula, E., Amram, P., Bosma, A., Bournaud, F., Duc, P.-A., Epinat, B., Fensch, J., Kraljic, K., Perret, V. and. Struck, C.*  
2018, MNRAS, 473, 585