

# Fabio Ancona – Curriculum Vitae



## POSIZIONE ATTUALE

Professore Ordinario, Dipartimento di Matematica dell'Università di Padova (dall'1 maggio 2017).

Settore concorsuale: 01/A3 Analisi Matematica, Probabilità e Statistica Matematica (ssd MAT/05 - Analisi Matematica).

E-Mail: [ancona@math.unipd.it](mailto:ancona@math.unipd.it)

## FORMAZIONE

- Laurea in Matematica, Università di Padova, Luglio 1989.  
Tesi: *Esistenza di Soluzioni per Inclusioni Differenziali senza Ipotesi di Convessità*.  
Relatore: Prof. Arrigo Cellina (S.I.S.S.A., Trieste)
- Ph.D. in Matematica, University of Colorado at Boulder (USA), Dicembre 1993.  
Tesi: *Homogeneous Normal Forms for Vector Fields with respect to an Arbitrary Dilation*.  
Relatore: Prof. Henry Hermes

## CURRICULUM ACCADEMICO

- Mag. 2017 - : Professore Ordinario (MAT/05 - Analisi Matematica), Dipartimento di Matematica, Università di Padova.
- Dic. 2013: Abilitazione nazionale di Professore di I Fascia (01/A3 - Analisi Matematica, Probabilità e Statistica Matematica).
- Nov. 2008 - Mag. 2017: Professore Associato (MAT/05 - Analisi Matematica), Facoltà di Ingegneria, Università di Padova.
- Nov. 2002 - Nov. 2008: Professore Associato (MAT/05 - Analisi Matematica), Facoltà di Ingegneria, Università di Bologna.
- Ott. 2001: Idoneità di Professore di II Fascia (A02 - Analisi Matematica), procedura valut. compar. bandita dall'Università dell'Aquila.
- Nov. 1994 - Nov. 2002: Ricercatore Universitario (A02 - Analisi Matematica), Facoltà di Ingegneria, Università di Bologna (Lug. 1995: presa di servizio).
- 1994: Borsa di ricerca Post-Doc, I.N.D.A.M. "Severi" (per programma di ricerca presso S.I.S.S.A., Trieste, sotto direzione scientifica del Prof. Alberto Bressan)
- 1993-1994: Post-Doc Research Assistant, University of Colorado at Boulder (USA).

- 1991-1993: Borsa di studio per l'estero, I.N.D.A.M. "Severi".

### Visitatore presso altre istituzioni (su invito)

- Mag. 2015, University of Oxford,
- Ott. 2010, Institute Henry Poincaré, Parigi (Francia).
- Lug. 2004, Apr. 2015, Penn State University, University Park (State College), (USA).
- Mag. 2001, Academia Sinica di Taipei (Taiwan).
- Ago. 1999, Lug. 2001, Lug. 2004, Stanford University (USA).

### Supervisione di Ph.D. e post-doc

- Fabio S. Priuli (assegnio di ricerca biennale), Università di Padova, 2011-2013.
- Khai T. Nguyen (assegnio di ricerca biennale del progetto ERC ConLaws, P.I. Stefano Bianchini),  
Università di Padova, 2011-2013.
- Giuseppe M. Coclite (co-supervisione), Ph.D. - S.I.S.S.A., 2003
- Paola Goatin (co-supervisione), Ph.D. - S.I.S.S.A., 2000

### Supervisione di studenti

- Alessia casagrande, Laurea Magistrale in Matematica, Università di Padova, 2019.
- Marta Bonaldi, Laurea Magistrale in Matematica, Università di Padova, 2016.
- Annalisa Zotto, Laurea Magistrale in Matematica, Università di Padova, 2016.
- Riccardo Lucchese, Laurea Magistrale in Ing. dell'Automazione, Università di Padova, 2014.
- Francesco Marcolin, Laurea Triennale in Ing. dell'Energia, Università di Padova, 2012

### Interessi di ricerca

- Sistemi iperbolici di leggi di conservazione (in una singola variabile spaziale):
  - buona posizione del Problema di Cauchy e del problema misto al bordo ed ai dati iniziali.
  - analisi delle proprietà fini delle soluzioni: struttura SBV, stime quantitative di compattezza (per leggi di conservazione e per equazioni di Hamilton-Jacobi in più variabili spaziali).
  - modelli di reti con rami su cui evolvono leggi di conservazione o equazioni di Hamilton-Jacobi (analisi delle soluzioni ai nodi e problemi di controllo correlati).
- Problemi di controllo per EDP nonlineari:
  - Controllabilità e stabilizzabilità asintotica di sistemi iperbolici di leggi di conservazione.
  - Controllabilità e stabilizzabilità asintotica dell'equazione generalizzata dell'asta iperelastica e dell'equazione di Camassa-Holm.
- Problemi di controllo per sistemi finito dimensionali:
  - Feedback discontinui stabilizzanti ed ottimali (o quasi ottimali). Patchy feedback: costruzione, proprietà di robustezza, analisi di schemi numerici. Problemi con vincoli.
  - Sistemi di controllo affini, omogenei rispetto a dilatazioni dello spazio. Forme normali, risonanze e stabilizzabilità asintotica.

**Membro di**

- American Mathematical Society (1991 - )
- G.N.A.M.P.A. (ex G.N.A.F.A.) (1995 - )
- Unione Matematica Italiana (1996 - )

**Attività di referee per**

- istituzioni:
  - INSA - Indian National Science Academy
  - TIFR Centre For Applicable Mathematics, Bangalore
  - MIUR - Progetti SIR - VQR
- riviste:
 

Acta Mathematica, Annales de l'Institut Henry Poincaré (C) - Analyse Non Linéaire, Applicable Analysis, Applied Mathematics Letter, Archive for Rational Mechanics and Analysis, Bulletin of Academia Sinica, Communications in Mathematical Physics, Communications in Partial Differential Equations, Communications on Pure and Applied Analysis, Computational and Applied Mathematics, Computational Optimization and Applications, Discrete and Continuous Dynamical Systems, ESAIM - Control Optimisation and Calculus of variations, IEEE Transactions on Automatic Control, International Journal of Control, International Journal of Modern Mathematics, Inverse Problems, Journal of Differential Equations, Journal of Dynamical and Control Systems, Journal of the European Mathematical Society, Mathematical Models & Methods in Applied Science (M3AS), Rocky Mountain Journal of Mathematics, Siam Journal on Control and Optimization, Siam Journal on Mathematical Analysis. Systems & Control Letters.

**PUBBLICAZIONI****• Articoli pubblicati su riviste**

1. F. Ancona, L. Caravenna & A. Marson, *On the structure of BV entropy solutions for hyperbolic systems of balance laws with general flux function*. J. Hyperbolic Differ. Equ. (2019).
2. F. Ancona, O. Glass & K.T. Nguyen, *On Kolmogorov entropy compactness estimates for scalar conservation laws without uniform convexity*. SIAM J. Math. Anal. (2019).
3. F. Ancona, A. Cesaroni, G.M.Coclite & M. Garavello, *On the optimization of conservation law models at a junction with inflow and flow distribution controls*. SIAM J. Control Optim., Vol. **56**, n. 1, (2018), pp. 370-3403. <https://doi.org/10.1137/18M1176233>.
4. F. Ancona, A. Bressan O. Glass & W. Shen: *Feedback Stabilization of Stem Growth*, J. Dynam. Differential Equations, (2017) <https://doi.org/10.1007/s10884-017-9633-z>.
5. F. Ancona, P. Cannarsa & K.T. Nguyen: *Compactness estimates for Hamilton-Jacobi equations depending on space*, Bull. Inst. Math. Acad. Sin. (N.S.), Vol. **11** (2016), no. 1, pp. 63-113. [http://w3.math.sinica.edu.tw/bulletin\\_ns/20161/2016104.pdf](http://w3.math.sinica.edu.tw/bulletin_ns/20161/2016104.pdf).
6. F. Ancona, P. Cannarsa & K.T. Nguyen: *Quantitative compactness estimates for Hamilton-Jacobi equations*, Arch. Ration. Mech. Anal., **219**, no. 2 (2016), pp.793-828. <http://link.springer.com/article/10.1007/s00205-015-0907-5>.

7. F. Ancona, O. Glass & K.T. Nguyen: *On compactness estimates for hyperbolic systems of conservation laws*, Ann. Inst. H. Poincaré - Anal. Non Linéaire, Vol. **32**, n. 6, (2015), pp. 1229-1257. <http://dx.doi.org/10.1016/j.anihpc.2014.09.002>.
8. F. Ancona, O. Glass & K.T. Nguyen: *Lower compactness estimates for scalar balance laws*, Comm. Pure Appl. Math., Vol. **65**, no. 9 (2012), pp. 1303-1329.
9. F. Ancona & A. Marson: *Sharp convergence rate of the Glimm scheme for general nonlinear hyperbolic systems*, Comm. Math. Phys., Vol. **302**, no. 3 (2011), pp. 581-630.
10. F. Ancona & A. Marson: *A locally quadratic Glimm functional and sharp convergence rate of the Glimm scheme for nonlinear hyperbolic systems*, Arch. Ration. Mech. Anal. **196**, no. 2 (2010), pp. 455-487.
11. F. Ancona & A. Marson: *Existence theory by front-tracking for general nonlinear hyperbolic systems*, Arch. Ration. Mech. Anal. **185**, no. 2 (2007), pp. 287-340.
12. F. Ancona & A. Bressan: *Nearly time optimal stabilizing patchy feedbacks*, Ann. Inst. H. Poincaré Anal. Non Linéaire. Vol. **24**, n. 2, (2007), pp. 279-310.
13. F. Ancona & G.M. Coclite: *On the Attainable set for Temple Class Systems with Boundary Controls*, SIAM J. Control Optim., Vol. **43**, n. 6, (2005), pp. 2166-2190.
14. F. Ancona & A. Marson: *Well-posedness for General  $2 \times 2$  Systems of Conservation Laws*, Mem. Amer. Math. Soc. **169**, no. 801 (2004).
15. F. Ancona & A. Bressan: *Stability Rates for Patchy Vector Fields*, ESAIM Control Optim. Calc. Var., Vol. **10**, (2004), pp. 168-200.
16. F. Ancona & A. Bressan: *Flow Stability of Patchy Vector Fields and Robust Feedback Stabilization*, SIAM J. Control Optim., Vol. **41**, n. 5, (2003), pp. 1455-1476.
17. F. Ancona & P. Goatin: *Uniqueness and Stability of  $\mathbb{L}^\infty$  Solutions for Temple Class Systems with Boundary and Properties of the Attainable Sets*, SIAM J. Math. Anal., Vol. **34**, n. 1, (2002), pp. 28-63.
18. F. Ancona & A. Marson: *Basic Estimates for a Front-Tracking Algorithm for General  $2 \times 2$  Conservation Laws*, Math. Models Methods Appl. Sci. - M3AS, Vol. **12**, n. 2, (2002), pp. 155-182.
19. F. Ancona & A. Marson: *A Wave-Front Tracking Algorithm for  $N \times N$  Non Genuinely Nonlinear Conservation Laws*, J. Differential Equations, Vol. **177**, (2001), pp. 454-493.
20. F. Ancona & A. Marson: *A Note on the Riemann Problem for General  $n \times n$  Conservation Laws*, J. Math. Anal. Appl., Vol. **260**, n.1, (2001), pp. 279-293.
21. F. Ancona & A. Bressan: *Patchy Vector Fields and Asymptotic Stabilization*, ESAIM Control Optim. Calc. Var., Vol. **4**, (1999), pp. 445-471.
22. F. Ancona & A. Marson: *Scalar Non-linear Conservation Laws with Integrable Boundary Data*, Nonlinear Anal., n. 6, Ser. A, Vol. **35**, (1999), pp. 687-710.
23. F. Ancona & A. Marson: *On the Attainable Set for Scalar Non-linear Conservation Laws with Boundary Control*, SIAM J. Control Optim., Vol. **36**, n. 1, (1998), pp. 290-312.
24. F. Ancona: *Homogeneous Tangent Vectors and High Order Necessary Conditions for Optimal Controls*, J. Dynam. Control Systems, Vol. **3**, n. 2, (1997), pp. 205-240.
25. F. Ancona: *Normal Forms for Vector Fields with respect to an Arbitrary Dilation*, NoDEA Nonlinear Differential Equations Appl., Vol. **3**, n. 3, (1996), pp. 305-322.
26. F. Ancona: *Decomposition of Homogeneous Vector Fields of Degree One and Representation of the Flow*, Ann. Inst. H. Poincaré Anal. Non Linéaire, Vol. **13**, n. 2, (1996), pp. 135-169.
27. F. Ancona & A. Bressan: *Moduli of Continuity of Selections from Non-convex Maps*, Set-Valued Anal., Vol. **1**, (1993), pp. 47-63.

28. F. Ancona & G. Colombo: *Existence of Solutions for a class of Non-Convex Differential Inclusions*, Rend. Sem. Mat. Univ. Padova, Vol. **83**, (1990), pp. 71-76.

• **Articoli pubblicati su volumi**

1. F. Ancona & G.M.Coclite: *Existence of global weak solutions to a generalized hyperelastic-rod wave equation with source*, (2014), apparirà in: “New Prospects in Direct, Inverse and Control Problems for Evolution Equations, Eds. A. Favini, G. Fragnelli, R.M. Mininni, Springer-Indam Series, Vol. 10, (Springer, 2015).
2. F. Ancona & A. Bressan: *Patchy feedbacks for stabilization and optimal control: general theory and robustness properties.*, in: Geometric control and nonsmooth analysis, Proceedings of “Geometric control and nonsmooth analysis conference (in honor of the 73rd birthday of H. Hermes and of the 71st birthday of R. T. Rockafellar)” (Roma, 2006), pp. 28-64, Eds. F. Ancona, A. Bressan, P. Cannarsa, F. Clarke & P.R. Wolenski, Ser. Adv. Math. Appl. Sci., 76 (World Sci. Publ., Hackensack, NJ, 2008).
3. F. Ancona & A. Marson: *Asymptotic stabilization of systems of conservation laws by controls acting at a single boundary point*, in “Control Methods in PDE-Dynamical Systems”, pp. 1-43, Eds. F. Ancona, I. Lasiecka, W. Littman, R. Triggiani, AMS Contemp. Math. Series **426** (AMS, Providence, 2007).

• **Atti di convegni**

1. F. Ancona & G. M. Coclite: *On the asymptotic stabilization of a generalized hyperelastic-rod wave equation*, in: Proceedings of the “14th International Conference on Hyperbolic problems: theory, numerics, applications (HYP2012)” (Padova, 2012), pp. 447–454, Eds. F. Ancona, A. Bressan, P. Marcati & A. Marson (AIMS, Springfield, MO, 2014).
2. F. Ancona, O. Glass & K.T. Nguyen: *On quantitative compactness estimates for hyperbolic conservation laws*, in: Proceedings of the “14th International Conference on Hyperbolic problems: theory, numerics, applications (HYP2012)” (Padova, 2012), pp. 249–257, Eds. F. Ancona, A. Bressan, P. Marcati & A. Marson (AIMS, Springfield, MO, 2014).
3. F. Ancona & A. Marson: *On the Glimm functional for general hyperbolic systems*, in: Discrete Contin. Dyn. Syst. - Supplement 2011, Vol. **1**, (Proceedings of the “8th AIMS International Conference, Dresden, Germany, 2010), Eds. W. Feng, Z. Feng, M. Grasselli, X. Lu, S. Siegmund & J. Voigt (2011), pp. 44–53.
4. F. Ancona & A. Marson: *On the convergence rate for the Glimm scheme*, in: Proceedings of the “12th International Conference on Hyperbolic problems: theory, numerics, applications (HYP2008)” (College Park, 2008), pp. 175–194, Eds. E. Tadmor, J.-G. Liu & A. Tzavaras Proc. Sympos. Appl. Math. Vol. **67**, (AMS, Providence, RI, 2009).
5. F. Ancona & S. Bianchini: *Vanishing viscosity solutions of hyperbolic systems of conservation laws with boundary*, in: “WASCOM 2005”–13th Conference on Waves and Stability in Continuous Media, Proceedings of the conference held in Acireale, June 19–25, 2005, pp. 13-21, Eds. R. Monaco, G. Mulone, S. Rionero & T. Ruggeri (World Sci. Publ., Hackensack, NJ, 2006).
6. F. Ancona & G.M. Coclite: *On the boundary controllability of first order hyperbolic systems*, in: Nonlinear Anal., Vol. **63**, n. 7, (2005), pp. e1955-e1966 (Proceedings of the “4th World Congress of Nonlinear Analysts (WCNA-2004)”, Orlando, Florida, 2004).
7. F. Ancona & A. Bressan: *Stabilization by patchy feedbacks and robustness properties*, in: Optimal Control, Stabilization, and Nonsmooth Analysis, Proceedings of “Louisiana Conference in Mathematical Control Theory (MCT’03)” (Baton Rouge, Louisiana, 2003), pp. 185-199, Eds. M.S. de Queiroz, M.A. Malisoff & P.R. Wolenski, Lecture Notes in Control and Inform. Sci., vol. 301 (Springer-Verlag, Heidelberg, 2004).

8. F. Ancona, A. Bressan & G.M. Coclite: *Some results on the Boundary Control of Systems of Conservation Laws*, in: Proceedings of the “9th International Conference on Hyperbolic problems: theory, numerics, applications (HYP2002)” (CalTech Pasadena , 2002), pp. 255-264, Eds. T.Y. Hou & E. Tadmor (Springer-Verlag, Heidelberg, 2003).
9. F. Ancona & A. Marson: *Well-posedness for Non Genuinely Nonlinear Conservation Laws*, in: Proceedings of the “8th International Conference on Hyperbolic problems: theory, numerics, applications (HYP2000)” (Magdeburg, 2000), Vol. **I**, pp. 29–38, Eds. H. Freistühler & G. Warnecke, Internat. Ser. Numer. Math., 140 (Birkhäuser, Basel, 2001).
10. F. Ancona & A. Marson: *Front Tracking for Non Genuinely Nonlinear Conservation Laws*, in: Proceedings of the “8th International Conference on Hyperbolic problems: theory, numerics, applications (HYP2000)” (Magdeburg, 2000), Vol. **I**, pp. 19–28, Eds. H. Freistühler & G. Warnecke, Internat. Ser. Numer. Math., 140 (Birkhäuser, Basel, 2001).

• **Articoli in preparazione**

1. F. Ancona, L. Caravenna & C. Christoforou, *Stability in the large of BV solutions to a model of granular flow*.
2. F. Ancona & G.M.Coclite: *Asymptotic stabilization of dissipative solutions to the generalized hyperelastic-rod wave equation*.
3. F. Ancona & F.S. Priuli: *Input to state patchy feedback stabilization*.
4. F. Ancona, K.T. Nguyen & F.S. Priuli: *On the controllability of Temple class systems with vanishing characteristic speeds via boundary and source controls*.
5. F. Ancona & G.M. Coclite: *Exact boundary controllability of first order linear hyperbolic systems*.
6. F. Ancona & S. Bianchini: *Vanishing viscosity solutions for general hyperbolic systems with boundary*.

PROGETTI DI RICERCA

- **Co-Supervisore con Marco Sammartino della sezione italiana di EDP nonlineari del progetto congiunto INDAM-CNRS-MPI:**  
LIA-COPDESC “*Laboratoire International Associé in Applied Analysis*” (2018-2021).
- **Coordinatore del progetto d’Ateneo dell’Università di Padova:**  
“*Traffic Flow on Networks: Analysis and Control*” (2014-2016).
- **Coordinatore dell’unità di Ricerca dell’Università di Padova del Progetto europeo Marie Curie:**  
FP7-PEOPLE-2010-ITN Network: “*Sensitivity Analysis for Deterministic Controller Design - SADCO*” (2010-2014).  
Finanziamento unità di Padova: 627.000 Euro. (Finanziamento del Network: 5.700.000 Euro).
- **Co-Coordiatore con Piermarco Cannarsa dei gruppi italiani del progetto congiunto INDAM-CNRS:**  
GDRE CONEDP “*Group de Recherche Europeen en Control des Equations aux Derivees Partielles*” (2010-2013 e 2014-2017).  
Finanziamento annuo: 30.000 Euro.

- **Componente del progetto europeo:**  
ERC Starting Grant “*Hyperbolic Systems of Conservation Laws: singular limits, properties of solutions and control problems*”, P.I.: Stefano Bianchini (2009-2013).
- **Coordinatore dei progetti:**  
GNAMPA-INDAM: “*Approssimazioni singolari di sistemi iperbolici non lineari e problemi di controllo al bordo*” (2003), “*Problemi multidimensionali e problemi di controllo per sistemi iperbolici*” (2004), “*Comportamento asintotico e stabilizzazione per sistemi di evoluzione*” (2009).

## ATTIVITÀ ORGANIZZATIVE

- **Membro del Comitato Scientifico del:**  
“*15th International Conference on Hyperbolic Problems: Theory, Numerics, Applications (HYP2014)*”, Lug.-Ago. 2014, IMPA, Rio de Janeiro.
- **Co-Chair del Comitato Organizzatore del:**  
“*14th International Conference on Hyperbolic Problems: Theory, Numerics, Applications (HYP2012)*”, Giu. 2012, Università di Padova.
- **Membro del Comitato Organizzatore e/o Scientifico dei seguenti convegni e scuole:**
  - “*IperPA2019 - 18th Meeting on Hyperbolic Equations*”, Mag. 2019, Università di Palermo.
  - “*Winter School on Fluid Dynamics, Dispersive equations and Quantum Fluids*”, Dic. 2018, Casa della Gioventù - Università di Padova, Bressanone (Bolzano).
  - “*Analysis, Control and Inverse Problems for PDEs*, Workshop of the LIA-COPDESC on Applied Analysis, Nov. 2018, Accademia Pontaniana di Napoli.
  - “*International Workshop on Hyperbolic and Kinetic problems: Theory and Applications*, Lug. 2018, Academia Sinica, Taipei.
  - “*Optimization, State constraints and Geometric Control [Conference on the occasion of Giovanni Colombo and Franco Rampazzo’s 60th birthday]*, Mag. 2018, Università di Padova.
  - “*INdAM Workshop - New Trends in Control Theory and PDEs: On the occasion of the 60th birthday of Piermarco Cannarsa*, Lug. 2017, I.N.D.A.M. “F. Severi”, Roma.
  - “*Eleventh meeting on Nonlinear Hyperbolic PDEs and Applications [On the occasion of the 60th birthday of Alberto Bressan]*”, Giu. 2016, S.I.S.S.A., Trieste.
  - “*Analysis and Control on Networks: trends and perspectives*”, Mar. 2016, Università di Padova.
  - “*IperGSSI2015 - 16th Meeting on Hyperbolic Equations*”, Ott. 2015, GSSI, L’Aquila.
  - *Sessione “Dynamics and Control” nell’“86th Meeting of the International Association of Applied Mathematics and Mechanics (Gamm 2015)”*, Mar. 2015, Lecce.
  - “*New Perspectives in Optimal Control and Games*”, Nov. 2014, “Sapienza” Università di Roma.
  - “*NetCo 2014 - Conference on New Trends in Optimal Control*”, Giu. 2014, Tours.
  - “*Modelling, Control and Inverse Problems for the Planet Earth in all its states (MC-PIT2013)*”, Nov. 2013, Institut Henry Poincaré, Parigi.
  - “*Two Days on Hyperbolic PDEs, Geometric Measure Theory and Optimal Transport*”, Ott. 2013, S.I.S.S.A., Trieste.
  - “*Tenth meeting on Hyperbolic Conservation Laws: Recent results and Research perspectives*, Lug. 2013, Università de L’Aquila.

- “*Mathematical Paradigms of Climate Science*”, Giu. 2013, I.N.D.A.M. “F. Severi”, Roma.
  - *Summer school and workshop “New Trends in Optimal Control”*, Set. 2012, Ravello.
  - “*Ninth meeting on Hyperbolic Conservation Laws, Fluid Dynamics and Transport Equations: recent results and research perspectives*”, Lug. 2011, S.I.S.S.A., Trieste.
  - “*New Trends in Analysis and Control of Nonlinear PDEs*”, Giu. 2011, I.N.D.A.M. “F. Severi”, Roma.
  - “*Modeling and Control of Nonlinear Evolutions Equations*”, Mag. 2011, S.I.S.S.A., Trieste.
  - “*Nonlinear Hyperbolic PDEs, Dispersive and Transport Equations: Analysis and Control*”, Mag.-Lug. 2011, S.I.S.S.A., Trieste.
  - “*Eighth meeting on Hyperbolic Conservation Laws and Fluid Dynamics: recent results and research perspectives*”, Set. 2010, S.I.S.S.A., Trieste.
  - “*Conférence sur le Contrôle des EDP*” (projet de GDRE CONEDP), Gen. 2010, C.I.R.M., Luminy (Marsiglia).
  - “*Seventh meeting on Hyperbolic Conservation Laws and Fluid Dynamics: recent results and research perspectives*”, Ago. 2009, S.I.S.S.A., Trieste.
  - “*Nonsmooth Analysis, Control Theory and Differential Equations*”, Giu. 2009, I.N.D.A.M. “F. Severi”, Roma.
  - “*Sixth meeting on Hyperbolic Conservation Laws: recent results and research perspectives*”, Lug. 2008, Università de L’Aquila.
  - *Minisimposio “Control Problems for Fluidodynamic Models” nell’ambito del “6th International Congress on Industrial and Applied Mathematics (ICIAM 2007)”*, Lug. 2007, ETH e University of Zurich, Svizzera.
  - “*Fifth meeting on Hyperbolic Conservation Laws: recent results and research perspectives*”, Giu. 2007, S.I.S.S.A., Trieste.
  - “*IPERPD2006 - 12th Meeting on Hyperbolic Equations*”, Set. 2006, Università di Padova.
  - “*Boltzmann Equation and Fluidodynamic Limits*”, Giu. 2006, S.I.S.S.A., Trieste.
  - “*Geometric Control and Nonsmooth Analysis*”, Giu. 2006, I.N.D.A.M. “F. Severi”, Roma.
  - “*AMS-IMS-SIAM Summer Research Conference on Control Methods in PDE-Dynamical Systems*”, Lug. 2005, Snowbird (Utah), USA.
  - “*Fourth meeting on Hyperbolic Conservation Laws: recent results and research perspectives*”, Giu. 2005, S.I.S.S.A., Trieste.
  - “*Lectures on Transport Equations and Multi-D Hyperbolic Conservation Laws*”, Gen. 2005, Università di Bologna.
  - “*Third meeting on Hyperbolic Conservation Laws: recent results and research perspectives*”, Giu. 2004, S.I.S.S.A., Trieste.
  - “*Winter School on Transport Equations and Control Theory for PDEs*”, Gen. 2004, Casa della Gioventù - Università di Padova, Bressanone (Bolzano).
- **Coordinatore della Commissione Colloquia Patavina, Dipartimento di Matematica, Università di Padova (2013 - ).**

## ATTIVITÀ EDITORIALI

- **Co-editore dei volumi:**

1. *Mathematical Paradigms of Climate Science*, Springer INdAM Series, Vol. 15., Eds. F. Ancona, P. Cannarsa, C. Jones, A. Portaluri (Springer, Cham Heidelberg, 2016).

2. *Proceeding of the 14th International Conference on Hyperbolic problems: theory, numerics, applications (HYP2012)*, Eds. F. Ancona, A. Bressan, P. Marcati, A. Marson (AIMS, Springfield, MO, 2014).
3. *HCDTE Lecture Notes - Nonlinear Hyperbolic PDEs, Dispersive and Transport Equations, Parts I-II.*, Eds. G. Alberti, F. Ancona, S. Bianchini, G. Crippa, C. DeLellis, A. Marson, C. Mascia (AIMS, Springfield, MO, 2013-2014).
4. *Proceeding of 7th Meeting on "Hyperbolic Conservation Laws and Fluid Dynamics: Recent Results and Research Perspectives*, *Rivista di Matematica dell'Università di Parma*, Vol. **1**, n.1 - New Series, Eds. F. Ancona, S. Bianchini, R.M. Colombo, G. Crippa, A. Marson (Università di Parma, 2010).
5. *Boltzmann Equation and Applications*, Special issue of *Discrete and Continuous Dynamical Systems - Series A*, Vol. **24**, n.1, Eds. F. Ancona, S. Bianchini, A. Bressan (AIMS, Springfield, MO, 2009).
6. *Geometric Control and Nonsmooth Analysis*, Series on Advances in Mathematics for Applied Sciences **76**, Eds. F. Ancona, A. Bressan, P. Cannarsa, F. Clarke, P.R. Wolenski (Worldscientific, Singapore, 2008).
7. *Transport Equations and Multi-D Hyperbolic Conservation Laws*, Lecture Notes of the Unione Matematica Italiana, 5, Eds. F. Ancona, S. Bianchini, R.M. Colombo, C De Lellis, A. Marson, A. Montanari (Springer, Berlin, UMI, Bologna, 2008).
8. *Control Methods in PDE-Dynamical Systems*, AMS Contemp. Math. Series **426**, Eds. F. Ancona, I. Lasiecka, W. Littman, R. Triggiani (AMS, Providence, 2007).

• **Membro del Comitato Editoriale di:**

- Nonlinear Analysis: Real World Applications (2014 - )
- De Gruyter Book Series on Partial Differential Equations and Measure Theory (2015 - )

## SEMINARI E CONFERENZE PLENARIE

• **Una selezione di seminari (su invito) a conferenze**

- “International Workshop on Hyperbolic and Kinetic Problems: Theory and Applications, Institute of Mathematics, Academia Sinica, Taipei, Taiwan, Lug. 2018.
- “Control of PDEs and Applications, CIRM, Marseille, Francia, Nov. 2015.
- “PDEs Optimal Design and Numerics, 6th edition, Centro de Ciencias de Benasque P. Pascual, Spagna, Set. 2015.
- “Contemporary Topics in Conservation Laws”, Besançon, Francia, Feb. 2015.
- “New Horizons on Optimal Control 2014”, Cascais, Portogallo, Set. 2014.
- “Control of PDEs”, Conservatoire national des arts et métiers, Parigi, Francia, Apr. 2014.
- “International Conference on Nonlinear Analysis: Fluid Dynamics and Kinetic Theory”, Institute of Mathematics, Academia Sinica, Taipei, Taiwan, Ott. 2013.
- “PDEs Optimal Design and Numerics, 5th edition, Centro de Ciencias de Benasque P. Pascual, Benasque, Spagna, Set. 2013.
- “Control of Partial and Differential Equations Days in Orleans, MAPMO, Orleans, Francia, Set. 2011.
- “iPerMe11 - XIV Incontro Nazionale Problemi di Tipo Iperbolico”, Messina, Feb. 2011.

- “Workshop on Hyperbolic systems and control in networks”, Institute Henry Poincaré, Parigi, Francia, Ott. 2010.
- “Nonlinear Conservation Laws and Related Problems”, Banff International Research Station, Banff, Alberta, Canada, Ott. 2009.
- “Workshop on Kinetic Theory”, Institute of Mathematics, Academia Sinica, Taipei, Taiwan, Mar. 2009.
- “Workshop on Hyperbolic Conservation Laws”, Oberwolfach, Germania, Dic. 2008.
- “12th International Conference on Hyperbolic Problems: Theory, Numerics, Applications (HYP2008)”, University of Maryland, College Park, USA, Giu. 2008.
- “2006 International Conference on Conservation Laws and Kinetic Equations”, Shanghai Jiao Tong University, Shanghai, Cina, Dic. 2006.
- “Hyperbolic Systems of Conservation Laws and Related Problems”, Banff International Research Station, Banff Alberta, Canada, Ott. 2006.
- “Summer Workshop on Kinetic Theory and Conservation Law”, Stanford University, USA, Lug. 2004.
- “Summer Workshop on Conservation Laws and Kinetic Theory”, Stanford University, USA, Lug. 2001.
- “Summer Workshop on Conservation Laws”, Stanford University, USA, Ago. 1999.

• **Altri seminari (su invito) a conferenze**

- Workshop of LIA-COPDESC on Applied Analysis “Analysis, Control and Inverse Problems for PDEs”, Accademia Pontaniana di Napoli, Nov. 2018.
- “Equazioni alle Derivate Parziali nella Dinamica dei Fluidi”, Università di Pisa, Feb. 2018.
- “PDEs and Applications”, Università di Bologna, Mag. 2017.
- “GDRE - CONEDP Workshop on Control of PDEs”, GSSI, L’Aquila, Apr. 2015.
- “PDEs, Inverse Problems and Control Theory”, Università di Bologna, Set. 2014.
- “Workshop on Analysis and Geometry in Control Theory and its Applications”, I.N.D.A.M. “F. Severi”, Roma, Giu. 2014.
- “Differential Equations, Inverse Problems and Control Theory”, Il Palazzone, Cortona, Giu. 2013.
- “Non Linear Control: Geometric Methods and Applications”, Università di Firenze, Apr. 2013.
- “PDEs, Inverse Problems and Control Theory”, Università di Bologna, Lug. 2012.
- “PDE’s, semigroup theory and inverse problems”, Università di Bologna, Set. 2010.
- Sessione “New Developments in Qualitative Behavior of Nonlinear Evolutionary PDEs” del “8th AIMS International Conference on Dynamical Systems, Differential Equations and Applications”, Technische Universität Dresden, Mag. 2010.
- “Workshop on Hyperbolic Conservation Laws and Fluid Dynamics”, Università di Parma, Feb. 2010.
- “Direct, Inverse and Control Problems for PDE’s”, Il Palazzone, Cortona, Set. 2008.
- Minisimposio “Nonlinear Differential Equations in Applied Mathematics”, in “SIMAI 9th Congress”, “Sapienza” Università di Roma, Set. 2008.
- “Workshop on Mathematical Control Theory”, Università di Milano - Bicocca, Nov. 2007.
- “Direct, Inverse and Control Problems for PDE’s”, I.N.D.A.M. “F. Severi”, Roma, Giu. 2007.

- “*Regularity in Hyperbolic Problems*”, Centro Residenziale Universitario, Bertinoro (Forlì), Nov. 2006.
- “*Evolution Equations: Direct and Inverse Problems*”, Università di Bologna, Set. 2006.
- “*Inverse and Control Problems for PDE’s*”, I.N.D.A.M. “F. Severi”, Roma, Mar. 2006.
- “*22nd IFIP TC 7 Conference on System Modeling and Optimization*”, Politecnico di Torino, Lug. 2005.
- “*Workshop on Feedback Control and Optimal Control*”, Certosa di Pontignano - Università di Siena, Lug. 2003.
- “*Workshop on Perturbative Methods in Non-linear Analysis*”, Università di Torino, Mag. 2003.
- “*Louisiana Conference on Mathematical Control Theory (MCT’03)*”, Louisiana State University, Baton Rouge, USA, Apr. 2003.
- “*Workshop on Nonlinear Analysis and Control Theory*”, Oporto, Portogallo, Giu. 1999.
- “*Workshop on Hyperbolic Systems of Conservation Laws*”, Lisbon, Portogallo, Apr. 1999.
- “*Summer Research Institute - Differential Geometry and Control*, University of Colorado, Boulder, USA, Ago. 1997.

• **Seminari (su invito) in istituzioni accademiche**

- University of Oxford, UK, Mag. 2015.
- Università di Ferrara, Gen. 2014.
- ENSTA ParisTech - UMA, Francia, Ott. 2012.
- Université Paris-Dauphine, Francia, Mar. 2011.
- “Sapienza” Università di Roma, Mar. 2007, Mar. 2010.
- Penn State University, University Park (State College), USA, Lug. 2004, Apr. 2015, Apr. 2019.
- Università di Roma “Tor Vergata”, Feb. 2004.
- Academia Sinica, Taipei, Taiwan, Mag. 2001.
- Politecnico di Torino, Mag. 1999.
- Università di Firenze, Feb. 1996, Mag. 1999.
- S.I.S.S.A., Trieste, Nov. 1994, Feb. 2000, Nov. 2001.
- Arizona State University, Tempe (Phoenix), USA, Mag. 1994.

## ATTIVITÀ DIDATTICA

- Analisi Matematica 1 e Analisi Matematica 2, Facoltà di Ingegneria, Università di Bologna (1995 - 2008), Università di Padova (2008 - ).
- Introduzione alle Equazioni alle Derivate Parziali, Laurea Magistrale in Matematica, Università di Padova (2014 - ).
- Equazioni Differenziali II (Introduzione alle leggi di conservazione), Laurea Magistrale in Matematica, Università di Padova (2013 - 2014).
- Introduzione alle Leggi di Conservazione Iperboliche, Dottorato di Ricerca in Scienze Matematiche, Università di Padova (2010).

- Calcolo delle Variazioni e Teoria del Controllo, Laurea Specialistica in Ingegneria dell'Automazione, Università di Bologna (2006).

Padova, 7 Maggio 2019