

# Camillo De Lellis Publications

## BOOKS and LECTURE NOTES

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C. De Lellis

Il teorema di Liouville ovvero perche' `` non esiste'' la primitiva di  $\exp(x^2)$

The paper, in italian, has appeared first in the journal "il Volterriano". The file which can be downloaded here contains minor modifications and will appear in Rivista dell'UMI.

C. De Lellis

Errata to `` Il teorema di Liouville ovvero perche' `` non esiste'' la primitiva di  $\exp(x^2)$ ''

C. De Lellis

Allard's interior regularity theorem: an invitation to stationary varifolds

C. De Lellis

Rectifiable sets, densities and tangent measures

Zurich Lectures in Advanced Mathematics. European Mathematical Society (EMS), Zürich.

M. Barsanti, F. Conti, C. De Lellis, T. Franzoni

Le Olimpiadi della Matematica. Seconda Edizione

## GEOMETRIC MEASURE THEORY

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C. De Lellis, A. Marchese, E. Spadaro, D. Valtorta

Rectifiability and upper Minkowski bounds for singularities of harmonic Q-valued maps

C. De Lellis, J. Ramic

Min-max theory for minimal hypersurfaces with boundary

C. De Lellis, A. De Rosa, F. Ghiraldin

A direct approach to the anisotropic Plateau's problem

C. De Lellis

$2$ -dimensional almost area minimizing currents

To appear in Bollettino UMI

C. De Lellis, E. Spadaro, L. Spolaor

Regularity theory for 2-dimensional almost minimal currents III: blowup

C. De Lellis, E. Spadaro, L. Spolaor

Regularity theory for 2-dimensional almost minimal currents II: branched center manifold

C. De Lellis, E. Spadaro, L. Spolaor

Regularity theory for 2-dimensional almost minimal currents I: Lipschitz approximation

To appear in Transactions of the AMS

C. De Lellis, E. Spadaro, L. Spolaor

Uniqueness of tangent cones for 2-dimensional almost minimizing currents

C. De Lellis

The size of the singular set of area-minimizing currents

C. De Lellis

The regularity of minimal surfaces in higher codimension

C. De Lellis, F. Ghiraldin, F. Maggi

A direct approach to Plateau's problem

To appear in Journal of the EMS

C. De Lellis, M. Focardi, B. Ruffini

A note on the Hausdorff dimension of the singular set for minimizers of the Mumford-Shah functional

Adv. Calc. Var. 7, pp. 539-545, 2014

C. De Lellis, E. Spadaro

Regularity of area-minimizing currents III: blow-up

To appear in Ann. of Math.

C. De Lellis, E. Spadaro

Regularity of area-minimizing currents II: center manifold

To appear in Ann. of Math.

C. De Lellis, E. Spadaro

Regularity of area-minimizing currents I:  $L^p$  gradient estimates

Geom. Funct. Anal. 24 (2014), no. 6, 1831–1884.

C. De Lellis

Errata to "Regularity of area-minimizing currents I:  $L^p$  gradient estimates"

C. De Lellis, E. Spadaro

Multiple valued functions and integral currents

To appear in Annali della Scuola Normale Superiore

L. Ambrosio, C. De Lellis, T. Schmidt

Partial regularity for mass-minimizing currents in Hilbert spaces.

To appear in CRELLE

C. De Lellis, M. Focardi

Density lower bound estimates for local minimizers of the 2d Mumford-Shah energy

Manuscripta Math. 142 (2013), 215-232. [PDF](#)

C. De Lellis, M. Focardi

Higher integrability of the gradient for minimizers of the 2d Mumford-Shah energy

J. Math. Pures Appl. (9) 100 (2013), 391-409.

C. De Lellis

Hyperbolic equations and SBV functions

Journées équations aux dérivées partielles (2010), Exp. No. 6, 10 p.

C. De Lellis, E. Spadaro

Center manifold: a case study

To appear in the Proceedings for the 2009 Conference in honor of De Giorgi and Stampacchia, held in Erice Discrete and Continuous Dynamical Systems Volume 31, Issue 4, Pages : 1249 - 1272, 2011

C. De Lellis

Errata to "Center manifold: a case study"

C. De Lellis, M. Focardi, E. Spadaro  
Lower semicontinuous functionals for Almgren's multiple valued functions  
Annales Academiae Scientiarum Fennicae vol. 36 pp. 393-410 (2011)

C. De Lellis, D. Tasnady  
The existence of embedded minimal hypersurfaces  
J. Differential Geom. 95 (2013), no. 3, 355–388.

S. Bianchini, C. De Lellis, R. Robyr  
SBV regularity for Hamilton-Jacobi equations in  $\mathbb{R}^n$ .  
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Errata to "SBV regularity for Hamilton-Jacobi equations in  $\mathbb{R}^n$ "

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Memoirs of the AMS 211 (2011), no. 991.

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C. De Lellis, F. Pellandini  
Genus bounds for minimal surfaces arising from min-max constructions.  
J. Reine Angew. Math. 644 (2010), 47–99.

C. De Lellis  
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Transport equations and multi-D hyperbolic conservation laws, 61–74, Lect. Notes Unione Mat. Ital.,  
5, Springer, Berlin, 2008.

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Errata to "A note to Alberti's rank-one theorem"

C. De Lellis, C. R. Grisanti, P. Tilli  
Regular selections for multiple-valued functions.  
Ann. Mat. Pura Appl. (4) 183 (2004), no. 1, 79–95.

T. H. Colding, C. De Lellis  
The min-max construction of minimal surfaces.  
Surveys in differential geometry, Vol. VIII (Boston, MA, 2002), 75–107, Int. Press, Somerville, MA,  
2003.

C. De Lellis  
Some fine properties of currents and applications to distributional Jacobians.  
Proc. Roy. Soc. Edinburgh Sect. A 132 (2002), no. 4, 815–842. [PDF](#)

C. De Lellis  
Errata to "Some fine properties of currents and applications to distributional jacobians"

## EULER EQUATIONS

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T. Buckmaster, C. De Lellis, L. Székelyhidi Jr., V. Vicol  
Onsager's conjecture for admissible weak solutions

C. De Lellis, L. Székelyhidi Jr.  
High dimensionality and h-principle in PDE  
To appear in the Bulletin of the AMS

C. De Lellis, L. Székelyhidi Jr.  
The  $h^s$ -principle and Onsager's conjecture  
Eur. Math. Soc. Newsl. No. 95 (2015), 19–24.

T. Buckmaster, C. De Lellis, P. Isett, L. Székelyhidi Jr.  
Anomalous dissipation for  $1/5$ -Hoelder Euler flows  
Ann. of Math. (2) 182 (2015), no. 1, 127–172.

C. De Lellis  
Errata to "Anomalous dissipation for  $1/5$ -Hoelder Euler flows"

T. Buckmaster, C. De Lellis, L. Székelyhidi Jr.  
Dissipative Euler flows with Onsager-critical spatial regularity  
To appear in CPAM

T. Buckmaster, C. De Lellis, L. Székelyhidi Jr.  
Transporting microstructure and dissipative Euler flows

C. De Lellis, L. Székelyhidi Jr.  
Dissipative Euler Flows and Onsager's Conjecture  
J. Eur. Math. Soc. (JEMS) 16 (2014), no. 7, 1467–1505.

C. De Lellis  
Errata to "Dissipative Euler flows and Onsager's conjecture"

A. Choffrut, C. De Lellis, L. Székelyhidi Jr.  
Dissipative continuous Euler flows in two and three dimensions

C. De Lellis, L. Székelyhidi Jr.  
Continuous dissipative Euler flows and a conjecture of Onsager.  
To appear in the Proceedings of the 6th European Congress of Mathematics

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C. De Lellis, L. Székelyhidi Jr.  
Dissipative continuous Euler flows  
Inventiones Mathematicae 193, Issue 2 (2013), Page 377-407

C. De Lellis, L. Székelyhidi Jr.  
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C. De Lellis, L. Székelyhidi Jr.  
The Euler equations as a differential inclusion.  
Ann. of Math. (2) 170 (2009), no. 3, 1417–1436.

## DIFFERENTIAL GEOMETRY

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A. Carlotto, C. De Lellis  
Min-max embedded geodesic lines on asymptotically conical surfaces

C. De Lellis, Inauen, L. Székelyhidi Jr.  
A Nash-Kuiper theorem for  $C^{1, \frac{1}{5}-\delta}$  immersions of surfaces in  $\mathbb{R}^3$  dimensions

C. De Lellis, P. M. Topping  
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S. Conti, C. De Lellis, L. Székelyhidi Jr.  
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T. H. Colding, C. De Lellis  
Singular limit laminations, Morse index, and positive scalar curvature.  
Topology 44 (2005), no. 1, 25–45.

## TRANSPORT EQUATIONS

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C. De Lellis, P. Gwiazda, A. Swierczewska-Gwiazda  
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Notes on hyperbolic systems of conservation laws and transport equations.  
Handbook of differential equations: evolutionary equations. Vol. III, 277–382, Handb. Differ. Equ., Elsevier/North-Holland, Amsterdam, 2007.

C. De Lellis  
Errata to "Notes on hyperbolic systems of conservation laws and transport equations."

L. Ambrosio, C. De Lellis, J. Maly  
On the chain rule for the divergence of BV-like vector fields: applications, partial results, open problems.  
Perspectives in nonlinear partial differential equations, 31–67, Contemp. Math., 446, Amer. Math. Soc., Providence, RI, 2007.

C. De Lellis  
The chain rule for the divergence of BV-like vector fields.  
Hyperbolic problems: theory, numerics and applications. I, 105–112, Yokohama Publ., Yokohama, 2006

G. Crippa, C. De Lellis  
Oscillatory solutions to transport equations.  
Indiana Univ. Math. J. 55 (2006), no. 1, 1–13.

## HYPERBOLIC CONSERVATION LAWS

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C. De Lellis, Radu Ignat  
A regularizing property of the 2d-eikonal equation  
Comm. Partial Differential Equations 40 (2015), no. 8, 1543–1557.

E. Chiodaroli, C. De Lellis, O. Kreml  
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E. Chiodaroli, C. De Lellis, O. Kreml  
Global ill-posedness of the isentropic system of gas dynamics  
Comm. Pure Appl. Math. 68 (2015), no. 7, 1157–1190.

C. De Lellis

Ill-posedness for bounded admissible solutions of the 2-dimensional p-system.

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C. De Lellis, F. Golse

A quantitative compactness estimate for scalar conservation laws.

Comm. Pure Appl. Math. 58 (2005), no. 7, 989–998.

C. De Lellis

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L. Ambrosio, F. Bouchut, C. De Lellis

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C. De Lellis

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L. Ambrosio, C. De Lellis

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C. De Lellis, F. Otto, M. Westdickenberg

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C. De Lellis, T. Rivière

The rectifiability of entropy measures in one space dimension.

J. Math. Pures Appl. (9) 82 (2003), no. 10, 1343–1367.

C. De Lellis

Errata to "The rectifiability of entropy measures in one space dimension".

C. De Lellis, F. Otto, M. Westdickenberg

Structure of entropy solutions for multi-dimensional scalar conservation laws.

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C. De Lellis, M. Westdickenberg

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L. Ambrosio, C. De Lellis

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## CALCULUS OF VARIATIONS

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C. De Lellis, F. Ghiraldin

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C. De Lellis, L. Székelyhidi Jr.  
Simple proof of two-well rigidity.  
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S. Conti, C. De Lellis  
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S. Conti, C. De Lellis, S. Müller, M. Romeo  
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## OTHER

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C. De Lellis, L. Székelyhidi Jr.  
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C. De Lellis  
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To appear in H. Holden and R. Piene (editors): The Abel Prize 2013–2017. Springer Verlag.

C. De Lellis, R. Robyr  
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C. De Lellis, G. Royer-Carfagni

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J. Elasticity 65 (2001), no. 1-3, 1–31 (2002).