

List of publications of Piero Villaggio (1932 – 2014)

I Research papers and other scientific articles

1. “Sul problema variazionale della lastra curva a simmetria assiale.” Atti Acc. Lig. Sc. Lett., **16**, 1-11 (1959).
2. “Sulla teoria non lineare delle lastre sottili elastiche a doppia curvatura.” Rend. Ist. Lomb. - Acc. Sc. Lett., **94**, 151-165 (1960).
3. “Su un problema non lineare relativo alla torsione di solidi prismatici.” Atti Acc. Lig. Sc. Lett., **18**, 1-29 (1961).
4. “Sui problemi di trasmissione dell’elasticità piana.” Rend. Ist. Lomb. - Acc. Sc. Lett., **95**, 493-524 (1961).
5. “Su un problema elastico piano della teoria dell’attrito volvente.” Rend. Ist. Lomb. - Acc. Sc. Lett., **95**, 919-940 (1961).
6. “Sui problemi al contorno per sistemi di equazioni differenziali lineari del tipo di stabilità dell’equilibrio elastico.” Ann. Sc. Norm. Sup. Pisa, III, **15/1-2**, 25-40 (1961).
7. “Su un problema misto relativo ad un semipiano elastico collegato ad una nervatura.” Atti Ist. Sc. Costr. Pisa, **84**, 1-16 (1961).
8. “Limiti inferiori del carico critico di lastre elastiche a doppia curvatura.” Atti Ist. Sc. Costr. Pisa, **86**, 1-20 (1961).
9. “Limiti inferiori del primo moltiplicatore critico di lastre sottili elastiche di rivoluzione.” Atti Ist. Sc. Costr. Pisa, **89**, 1-19 (1961).
10. “Sull’esistenza e l’unicità di soluzioni dei problemi al contorno in elastoplasticità.” Rend. Ist. Lomb. - Acc. Sc. Lett., **96**, 712-721 (1962).
11. “Su un problema misto relativo alla statica delle dighe cilindriche spesse.” Atti Ist. Sc. Costr. Pisa, **93**, 1-18 (1962).
12. “Tensioni deformazioni in flange sottili circolari elastiche.” Atti Ist. Sc. Costr. Pisa, **95**, 1-34 (1962).
13. “Limiti superiori del fattore di concentrazione della tensione intorno a fori ipotroccoidali.” L’Aeroteca, **6/3**, 119-128 (1962).
14. “Su alcune formule di maggiorazione per l’energia di deformazione di un corpo elastico.” Le Matematiche, **17/2**, 121-135 (1962).
15. “Su un criterio di stabilità cinetica di sistemi meccanici soggetti ad azioni impulsive.” Rend. Ist.

Lomb. - Acc. Sc. Lett., **97**, 96-100 (1963).

16. "Condizioni di sicurezza all'instabilità aerodinamica di lastre sottili in regime supersonico." Atti Ist. Sc. Costr. Pisa, **96**, 1-11 (1963).
17. "Sullo scorrimento viscoso del conglomerato in flessione pura." Atti Ist. Sc. Costr. Pisa, **100**, 1-14 (1963).
18. "Studio di un sistema servomotore per prove di rilassamento." Atti Ist. Sc. Costr. Pisa, **101**, 1-8 (1963).
19. "Limiti di collasso plastico-rigido di unioni chiodate." Costr. Met., **1**, 3-11 (1964).
20. "Limiti di resistenza di pali in terreno plastico-rigido." Il Cemento, **10**, 25-30 (1964).
21. "Analisi limite di piastre sottili appoggiate plastico-rigide." Giorn. Genio Civ., **3**, 133-141 (1965).
22. "La nozione di efficienza teorica nei bulloni pretesi." Costr. Met., **4**, 284-288 (1965).
23. "Alterazione perturbativa dei carichi critici di lastre piane sottili." Giorn. Genio Civ., **12**, 607-616 (1965).
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26. "Stabilità rispetto al convesso dei domini plastici delle travature." Giorn. Genio Civ., **2-3**, 101-109 (1968).
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30. "Strong ellipticity conditions for the differential operator of the finite isotropic elasticity." Meccanica, **5/3**, 191-196 (1970).
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32. "Energetic bounds in finite elasticity." Arch. Rat. Mech. Anal., **45/4**, 282-293 (1972).
33. "Formulation of some homogeneous thermodynamic processes as variational inequalities." In: Int. Symposium on Foundations of Plasticity. Warsaw, August 30 - Sept. 2 (1972).
34. "Condition of stability for thermoelastic continua." Meccanica, **7/1**, 19-22 (1972).

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37. "On stability in the classical linear theory of fluid mixtures." *Ann. Mat. Pura e Appl.*, (IV), **111**, 57-67 (1976) (with M. Gurtin).
38. "Condition of stability and wave speeds for fluid mixtures." *Meccanica*, **11/4**, 191-195 (1976) (with I. Müller).
39. "Two-sided estimates in unilateral elasticity." *Int. J. Solids Structures*, **13**, 279- 292 (1977).
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47. "Maximum modulus theorems for the elastic half-space." *Riv. Mat. Univ. Parma*, **5/5** , 663-672 (1979).
48. "Inverse boundary value problems in structural optimization." In: *Free Boundary Problems (Proc. Sem. Pavia)*, *Ist. Naz. Alta Matematica*, **II**, 587-599 (1979).
49. "The exact deflection of an elastic beam over a soft obstacle." *Meccanica*, **14/4**, 219-223 (1979).
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77. "New results in shape optimization." In: Boundary Control and Boundary Variation (J.P. Zolésio Ed.) Lecture Notes in Control and Inform. Sci., Vol. 178, pp. 356-361. Berlin/Heidelberg/New York: Springer (1992) (with J. P. Zolésio).
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88. "Suboptimal shape of a plate stretched by planar forces." In: Partial Differential Equations Methods in Control and Shape Analysis (ed. by G. Da Prato and J.P. Zolésio). Lecture Notes in Pure Appl. Math. Vol. 188, pp. 321-331. New York: Marcel Dekker (1997) (with J.P. Zolésio).
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147. "The optimal shape of a plinth." *Int. J. Engng. Sci.*, **77**, 24-29 (2014) (with R. J. Knops).
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149. "Transmission of concentrated forces in plane elasticity across similar bodies." (In preparation, with M. J. Leitman).

II Books

1. Qualitative Methods in Elasticity. Noordhoff. Groningen (1977).
2. Mathematical Models for Elastic Structures. Cambridge University Press. Cambridge (1997).
3. Die Werke von Johann I und Nicolaus II Bernoulli: Band 6 Mechanik I. Birkhäuser. Basel (2008).