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Nota di contenuto	Introduction -- Bernstein Bézier form and its role in studying multivariate splines -- The algebra of splines group actions and homology -- A study on approximation by quartic splines defined on refined triangulations -- Construction of 2D explicit cubic -- Overlap Splines and Meshless Finite Difference -- A characterization of linear independence of THB splines in $\mathbb{R}^n$ -- Restriction and Extension for planar splines on triangulations -- Supersmoothness of multivariate splines -- Using Geometric Symmetries to Achieve Super Smoothness for Cubic Powell-Sabin Splines -- Finite element diagram chasing -- On tensor product bases of PHT splinespaces -- Momentum graphs, Chinese remainder theorem and the surjectivity of the restriction map -- A Parsimonious Approach to $C^2$ Cubic Splines on Arbitrary Triangulations -- Alcove Walks and GKM Theory for Affine Flags -- Open problems in splines.

## Sommario/riassunto

The book, based on the INdAM Workshop "Approximation Theory and Numerical Analysis Meet Algebra, Geometry, Topology" provides a bridge between different communities of mathematicians who utilize splines in their work. Splines are mathematical objects which allow researchers in geometric modeling and approximation theory to tackle a wide variety of questions. Splines are interesting for both applied mathematicians, and also for those working in purely theoretical mathematical settings. This book contains contributions by researchers from different mathematical communities: on the applied side, those working in numerical analysis and approximation theory, and on the theoretical side, those working in GKM theory, equivariant cohomology and homological algebra.

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