Título: Geometry And Phase Transitions In Colloids And Polymers

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This monograph represents an extension of the author's original PhD thesis and includes a more thorough discussion on the concepts and mathematics behind his research works on the foam model, as applied to studying issues of phase stability and elasticity for various non-closed packed structures found in fuzzy and colloidal crystals, as well as on a renormalization-group analysis regarding the critical behavior of loop polymers upon which topological constraints are imposed. The common thread behind these two research works is their demonstration of the importance and effectiveness of utilizing geometrical and topological concepts for modeling and understanding soft systems undergoing phase transitions.

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The Big Picture:
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