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Sommario/riassunto	The gas foil bearing (GFB) technology is a key factor for the transition to oil-free rotating machinery. Among numerous advantages, GFBs offer the unique ability to be lubricated with working fluids such as refrigerants. However, the computational analysis of refrigerant-lubricated GFB–rotor systems represents an interdisciplinary problem of enormous complexity. This work pushes forward existing limits of feasibility and establishes a new strategy that enables stability and bifurcation analyses.