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The deformed Hermitian—Yang—Mills equation, the family of C-subsolutions, and the solvability

The deformed Hermitian—Yang—Mills equation, which will be abbreviated as dHYM equation, was discovered around the same time in the year 2000 by Mariño—Minasian—Moore—Strominger and Leung—Yau—Zaslow using different points of view.

In this talk, first, I will skim through Leung—Yau—Zaslow's approach in a simple way. Then I will introduce the C-subsolution which is introduced by Székelyhidi (See also Guan) and I will go over some known solvability results of the dHYM equation. Last, I will show some of my recent works on the solvability when complex dimension equals three or four.