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Deblurring for Nuclear Physics

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Deblurring is commonly applied in optics to correct images for distortions caused by apparatus. Here, we analyze the deblurring from the perspective of applications to nuclear and high energy data. To understand the deblurring we employ Singular Value Decomposition (SVD). We look for cases where the deblurring is successful and where it fails. The essential role is played by null space. Important role in suppressing an uncontrolled growth of null-space contributions in the restored images is played by regularizations. Surprisingly, the deblurring can achieve a partial success in restoring null space contributions in the case of high-contrast intensity distributions.

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