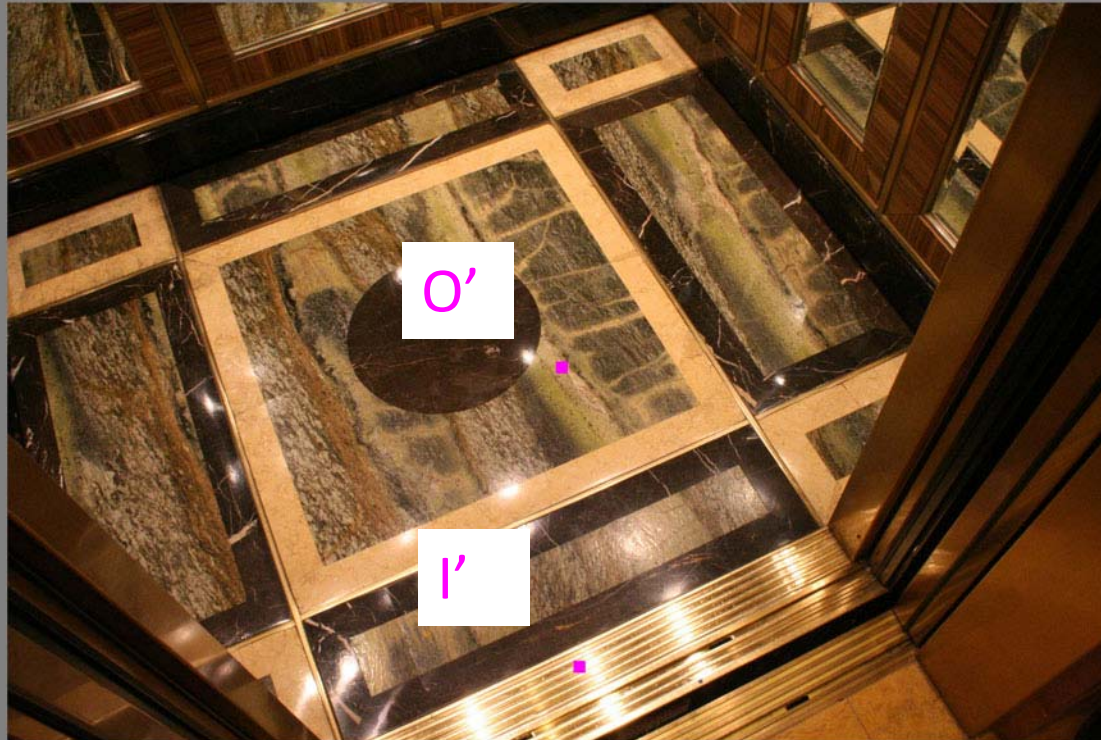The eight parameter transformation is useful for obtaining approximations for the elements of exterior orientation (EO), that is the "pose" or position and attitude of the camera, at the time of exposure. This utility is enhanced because there is a way to express the eight parameter transformation so it is linear in the unknowns. This transformation is also useful for rectifying imagery of planar objects or surfaces.

An example follows with labeled features from the derivation of the EO extraction from the eight parameters.

Original image, oblique photo of floor of elevator car
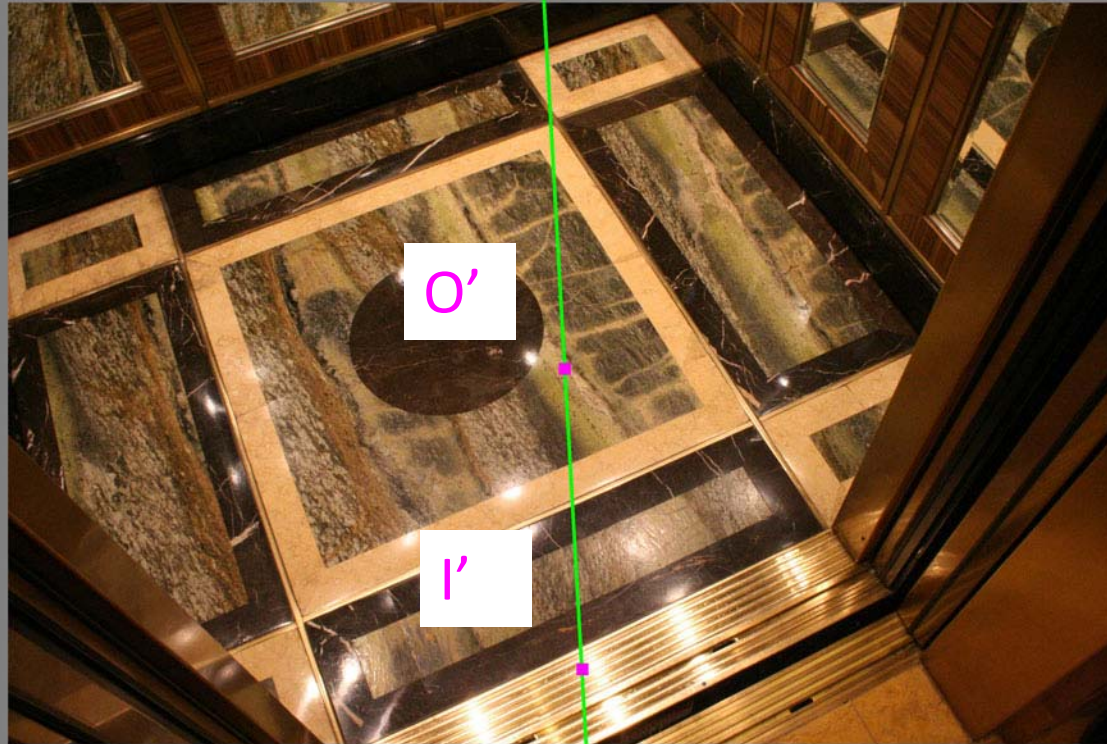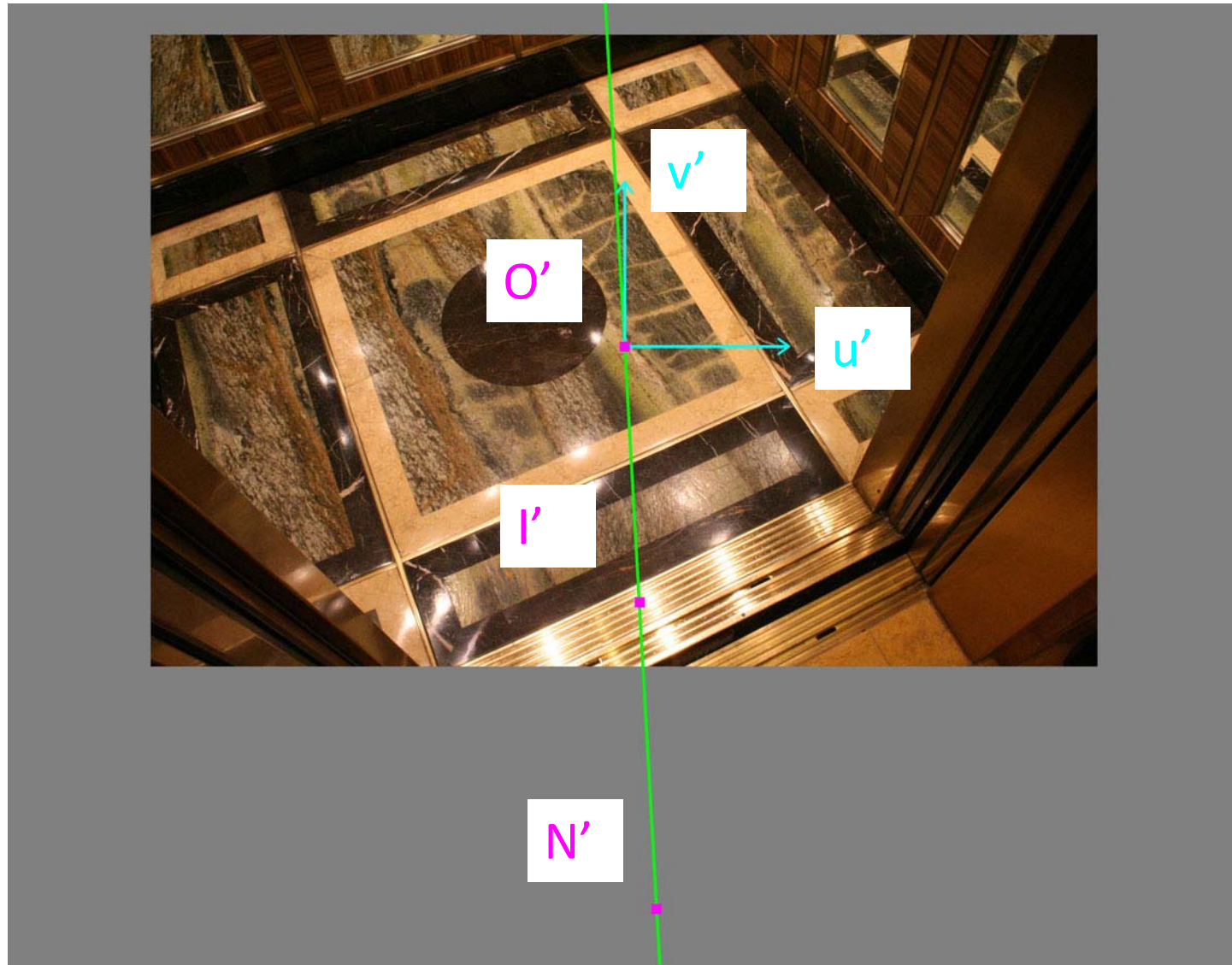
Principal Point, Isocenter, Nadir Point
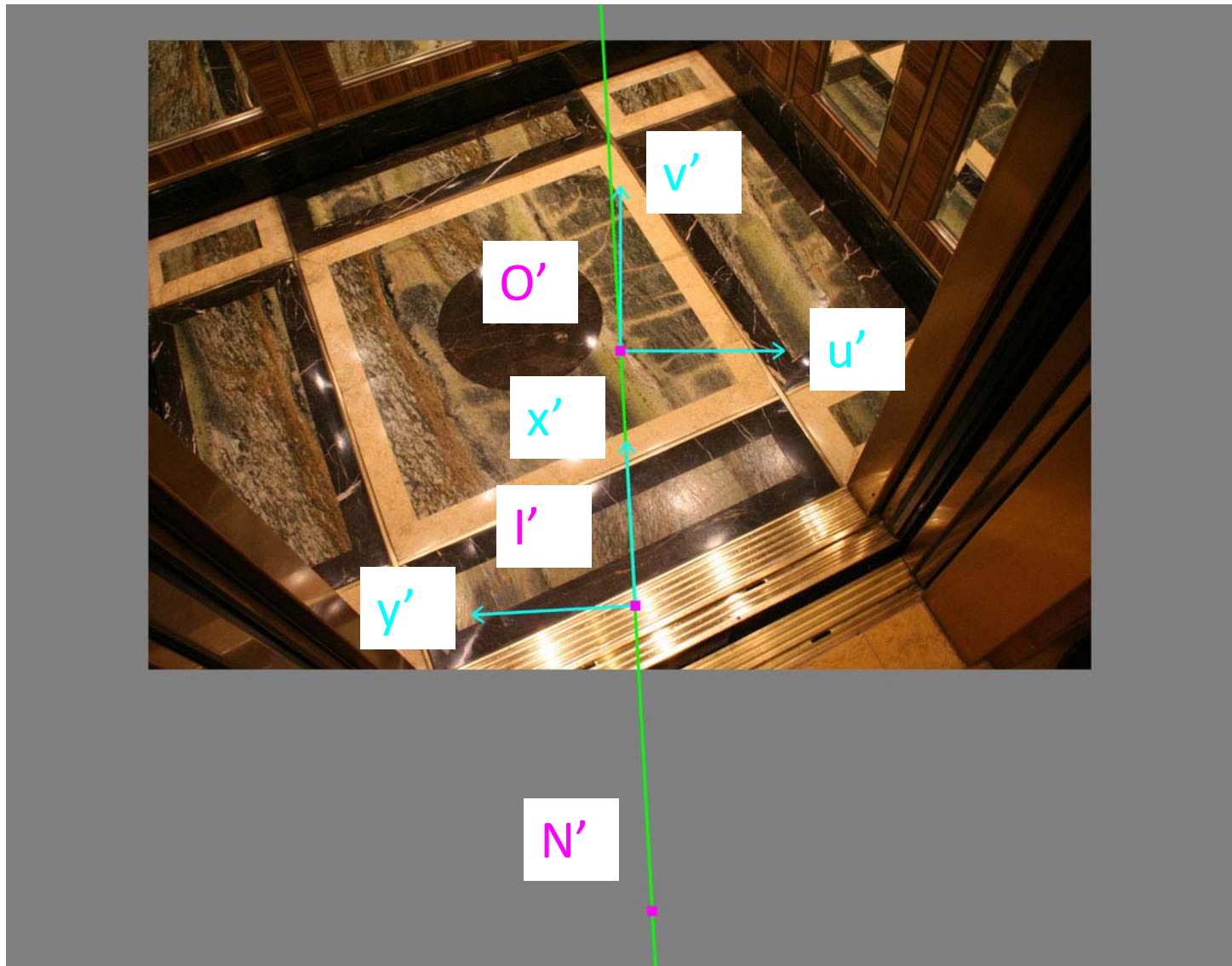
Principal Line, perpendicular to axis of tilt

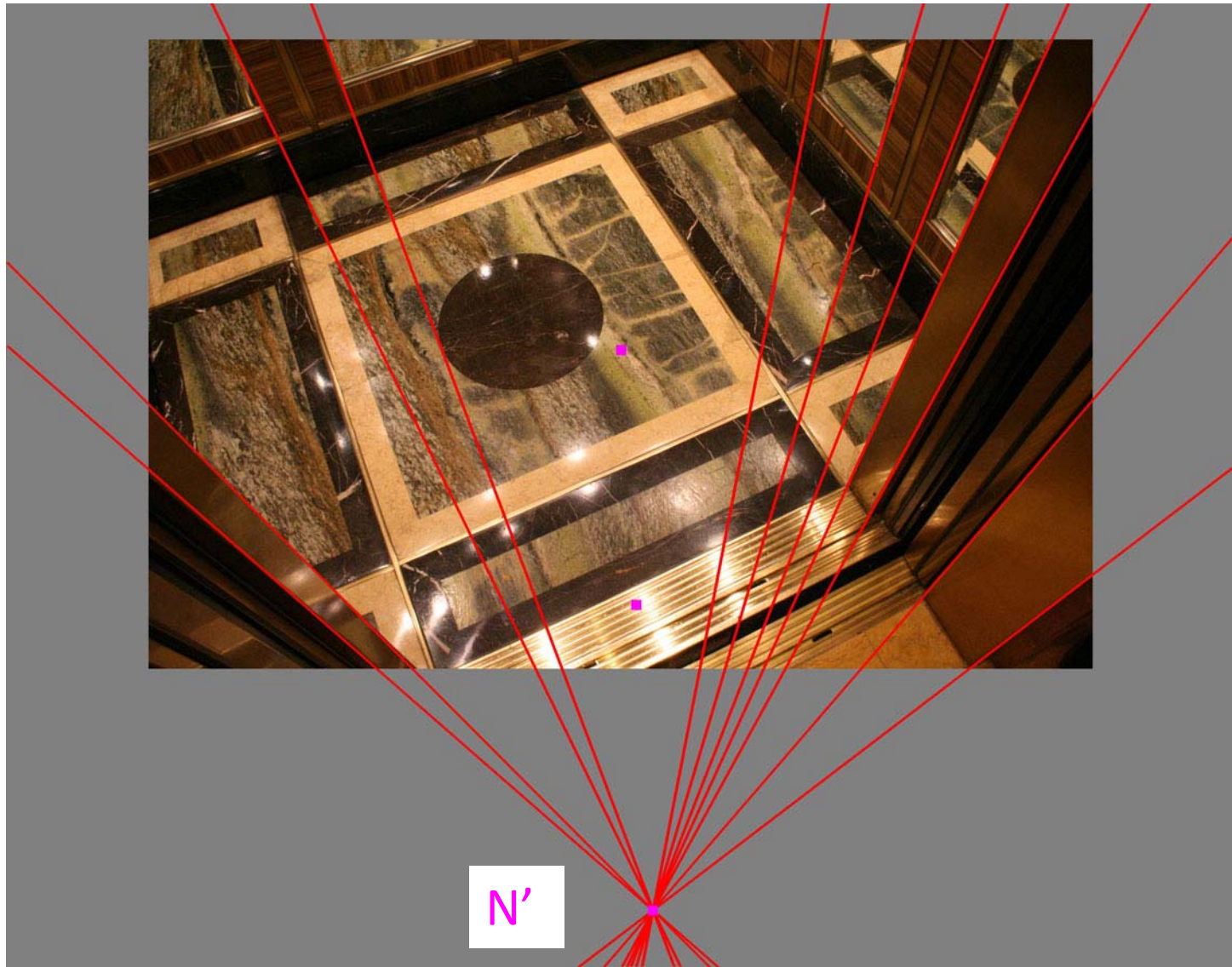u', v' axes, measurement axes, here with origin at princ. point

x', y' system with origin at isocenter, aligned with princ. line

Lines along vertical features pass through the nadir point, N'

N'

In addition to approximating EO, 8-Par useful for rectification