Fully Tempered Duplex Scale, U.S Patent 9,117,421

 And Longitudinal Modeling in pianos.

Presented by; Edward J. McMorrow, RPT 2018 P.T.G. National Convention

Steinway Duplex Scale Patent of 1872

Transverse Modes, Longitudinal Modes, Pivot Termination

Problem noises from conventional duplexes (read note 1 from PTGJ article)

Pivot Termination idealized, Straight string paths, L-mode driven bridge rocking

False beat sources, loose bridge pin, non-uniform wire, offset string path, L-modes coupling into T-modes via bridge rocking

Hardness of terminations and L-mode

Podelsik and Lee paper about treble L-mode tonal significance

Describe model 121 Chickering treble bridge mod which cured false beats.

Describe Duplex ratio mapping across compass.