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**SAW Filter Computer-Aided Design
(SAWCAD) Demonstration**

Outline

1. What is SAWCAD

2. Flow-Chart of the Computer-Aided Design of bidirectional SAW Filters

3. SAWCAD Structure and Organization

4. Tutorial SAWCAD Demonstration

4.1. Bidirectional SAW filter design

4.1.1. Optimum and suboptimum SAW filter synthesis
(Remez, WLMS, LP, NLP)

4.2. Factorizational SAW filter synthesis

4.3. SAW filter simulation (SAWFAT)

4.4. Synthesis of the Withdrawal-Weighted SAW transducers

4.4.1. Broadband WW synthesis (zero-one optimization)

4.4.2. High-shape factor narrowband WW synthesis

4.5. SAW filter topology (centrosymmetric, slanted, V-type)

4.6. Compensation of the second-order effects

4.6.1. Circuit effects (Source/load, matching)

4.6.2. SAW diffraction (parabolic approximation)

4.2. SPUDT/RSPUDT design

4.2.1. SPUDT synthesis and simulation

4.2.2. RSPUDT optimization

4.3. Slanted-finger low loss SPUDT SAW filters

4.4. SAW transducers with floating fingers

4.4.1. Charge density distribution calculation

4.4.2. FEUDT simulation

5. SAW Filter Matching

5.1. Bidirectional SAW Filters

5.2. Slanted-finger SPUDT SAW filters

5.3. SPUDT/RSPUDT SAW filters

6. Photomask Design

5.1. Bidirectional SAW Filters

5.2. Slanted-finger SPUDT SAW filters

5.3. SPUDT/RSPUDT SAW filters