

## Workshop on layout extraction

Schedule	Sun 15 Oct	Day 1 – Mon 16 Oct Inductance	Day 2 – Tue 17 Oct Resistance, capacitance, coupling and magnetic fields	Day 3 – Wed 18 Oct LVS and compact models	Day 4 – Thu 19 Oct Advanced topics	Day 5 – Fri 20 Oct Applications
8h00 – 9h00		On-site check-in 8h45 – 9h00 Welcome <b>C Fourie</b>				
9h00 – 10h00		<b>D1S1</b> InductEx installation and startup <b>SM Team</b>	<b>D2S1</b> Resistance and capacitance extraction <b>C Fourie</b>	<b>D3S1</b> InductEx-LVS: setup for layout-versus-schematic verification <b>K Jackman</b>	<b>D4S1</b> JoSIM and FluxWave introduction, working with phase <b>J Delport</b>	<b>D5S1</b> S-parameters and filters, frequency analysis <b>K Jackman</b>
10h00 – 11h00		<b>D1S2</b> InductEx introduction, layer definition file setup for fab process <b>C Fourie</b>	<b>D2E2</b> Add resistance to SFQ layouts and extract example capacitances <b>C Fourie</b>	<b>D3S2</b> LVS of SFQ and chip-level layouts <b>K Jackman</b>	<b>D4E2</b> Model example circuits with FluxWave and JoSIM <b>J Delport</b>	<b>D5S2</b> Package modelling <b>C Fourie</b>
10h00 – 10h30		Break	Break	Break	Break	Break
10h30 – 11h30		<b>D1S3</b> Inductance Extraction: basic line structures <b>T Hall</b>	<b>D2S3</b> Densely coupled AQFP layouts <b>C Fourie</b>	<b>D3S3</b> Compact model extraction of SFQ and SQIF layouts <b>K Jackman</b>	<b>D4S3</b> Flux trapping analysis in SFQ layouts and compact models <b>C Fourie</b>	<b>D5S3</b> Bias current coupling, ground current analysis <b>C Fourie</b>
11h30 – 12h30		<b>D1E4</b> Model basic processes and extract inductance of example structures. <b>T Hall</b>	<b>D2E4</b> Model AQFP layouts for extraction <b>C Fourie</b>	<b>D3E4</b> Do LVS verification of example problems <b>K Jackman</b>	<b>D4E4</b> Flux trapping extraction exercises with InductEx, InductEx-LVS and JoSIM <b>C Fourie &amp; K Jackman</b>	<b>D5E4</b> Frequency analysis examples of filter structures <b>K Jackman</b>
12h30 – 14h00		LUNCH	LUNCH	LUNCH	LUNCH	LUNCH
14h00 – 15h00		<b>D1S5</b> Inductance extraction: Basic SFQ layouts <b>C Fourie</b>	<b>D2S5</b> Magnetic field calculation and visualization <b>K Jackman</b>	<b>D3E5</b> Free-use exercises with SM Team <b>SM Team</b>	<b>D4S5</b> SQUIDs and gradiometers: effective area, field/flux sensitivity <b>C Fourie</b>	<b>D5E5</b> Free-use exercises with SM Team <b>SM Team</b>
15h00 – 16h00		<b>D1S6</b> Result verification and error resolution <b>C Fourie</b>	<b>D2S6</b> Optional attendee work/topic presentations <b>T Hall</b>	<b>D3E6</b> Free-use exercises with SM Team <b>SM Team</b>	<b>D4S6</b> SQIF analysis and simulation <b>K Jackman</b>	<b>D5E6</b> Free-use exercises with SM Team <b>SM Team</b>
16h00 – 17h00		<b>D1E7</b> Process example layouts to find inductance <b>C Fourie</b>	<b>D2P7</b> Optional attendee poster presentations <b>T Hall</b>	<b>D3E7</b> Free-use exercises with SM Team <b>SM Team</b>	<b>D4E7</b> Do exercises on SQUID and SQIF analysis <b>K Jackman</b>	<b>D5E7</b> Free-use exercises with SM Team <b>SM Team</b>