

RESPIRE
workshop

Jan.25-27 2001

Martigny

***Experiments on
different feature sets;
comparison with DC
baseline system***

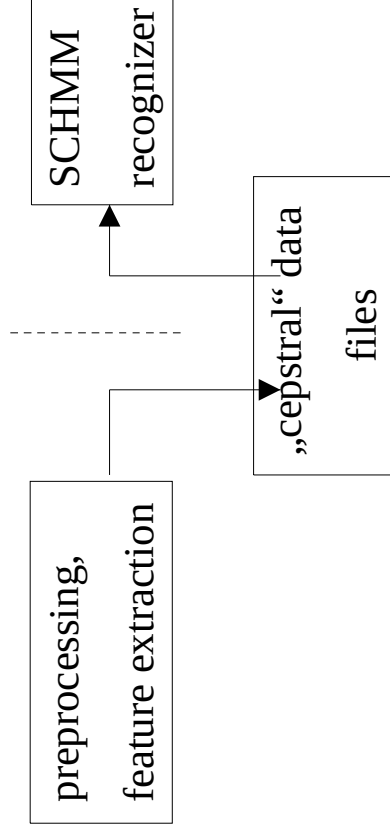
Joan Mari
Hilario

Fritz Class

Experiments on AURORA 2000 database:

Features of DC baseline system:

- training on N1 ... N4 sets (multi-condition training)
- NSPS (nonlinear spectral subtraction)
- VTN (vocaltract length normalization)
- MFCC features with cepstral mean normalization
- „cepstral“ interface:
„cepstral“ interface



Comparison DC-baseline / ICSI-Tandem features

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%
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	average N1 ... N4 test sets			
	clean	SNR 20	SNR 10	SNR 0
DC baseline without LDA	1.6	2.2	7.9	37.1
DC baseline with LDA	1.6	1.8	6.6	31.9
ICSI Tandem feat. 12 plp- dd+msg; without LDA	0.9	0.8	2.4	21.4
ICSI Tandem feat. 12 plp- dd+msg; with LDA	1.1	1.1	2.6	21.3

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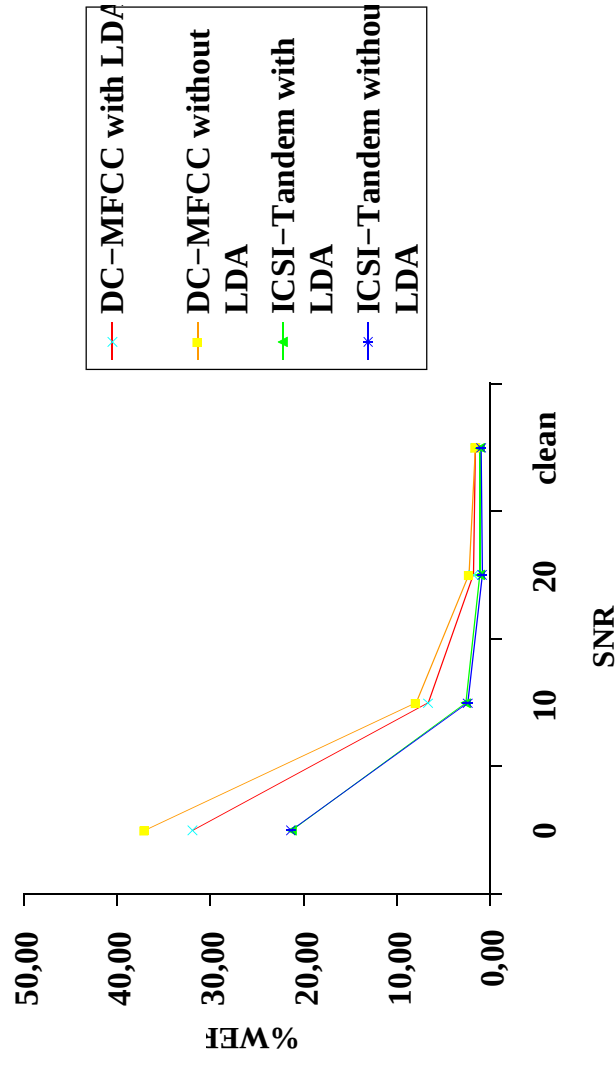
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Comparison DC-baseline /
FPM's

•FPM's: word models trained on **clean** speech

•DC: word models multi-condition training

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WER

	average N1 ... N4 test sets			
	clean	SNR20	SNR10	SNR0
FPM's log-RASTA	1.0	3.8	21.6	72.7
FPM's J-RASTA	1.3	3.1	13.2	55.8
FPM's with DC-models	1.2	2.2	11.8	55.1
DC baseline	1.6	1.8	6.6	31.9

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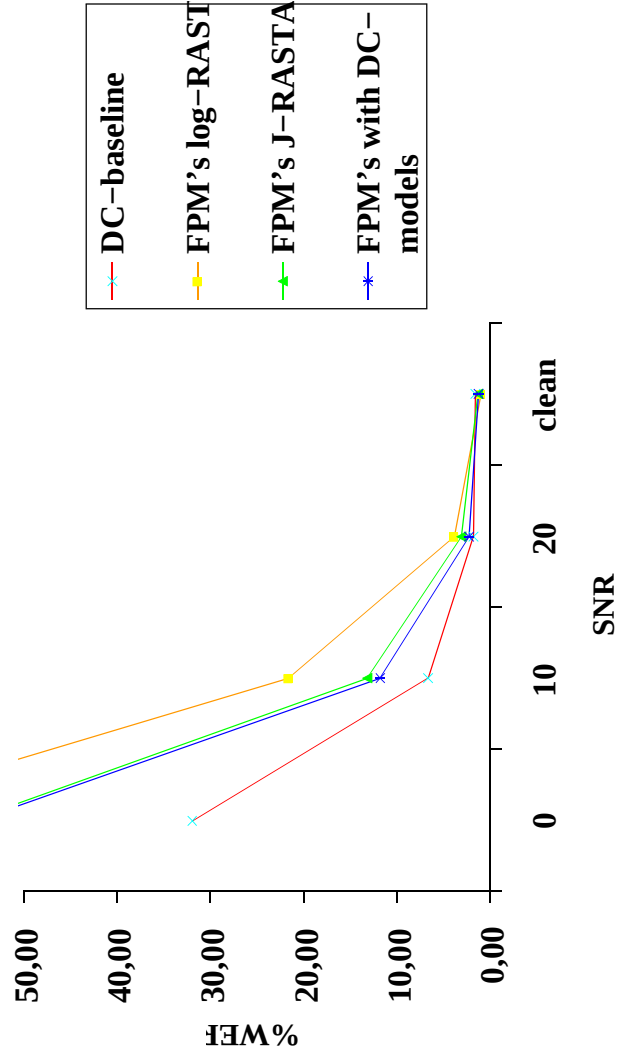
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Comparison DC-baseline / FPM's

- FPM's: word models trained on **clean** speech
- DC: word models multi-condition training



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Discussion about demonstrators

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RESPITE demonstrators

Statements:

- our demonstrator strategy: „show project achievements (possibility of online application of the new techniques), **not** commercially relevant“!!
- a demonstrator makes sense only, if there are better techniques than in the baseline system
==> if we have really found such techniques (compared to the baseline system in offline simulations), we can build a demonstrator
- a full integration of the new techniques means a redesign of the complete system ==> not possible within RESPITE
==> combination of different modules (processes) via interfaces (files) or using DLL's under windows
- a demonstration could be done e.g. in a car using a laptop

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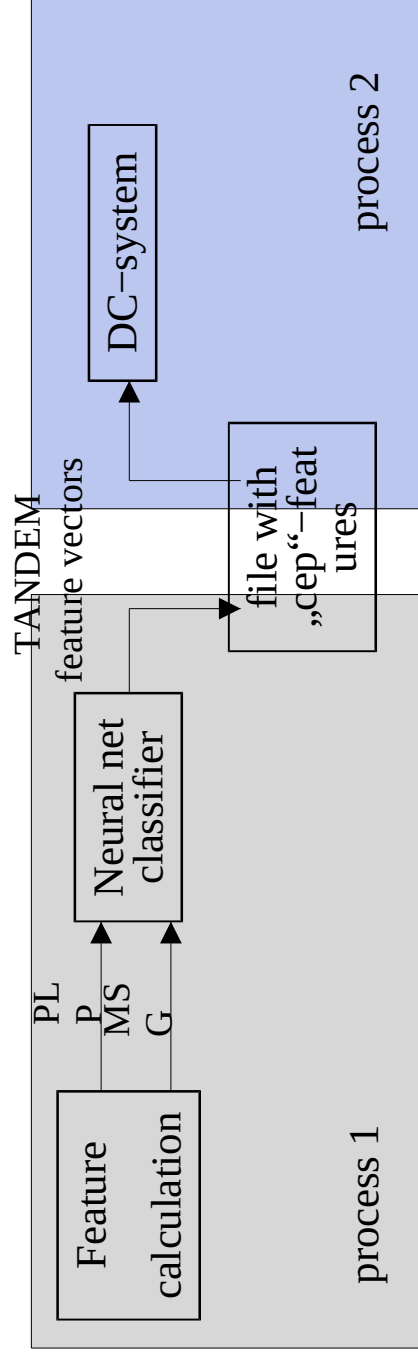
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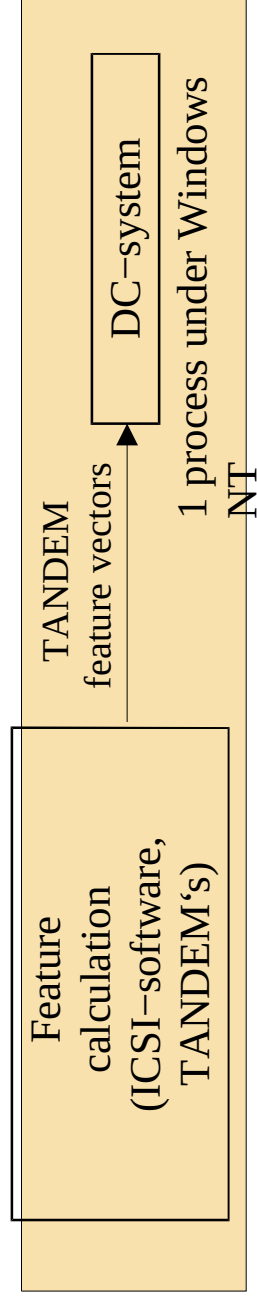
Discussion about demonstrators

**possible demonstration system:
TANDEM features with DC system**

architecture 1



architecture 2



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***Discussion about
demonstrators***

**RESPITE
demonstrators**

Questions:

- sources (ICSI) for TANDEM features ?
- missing data demonstrator ?
- What are „potential users with respect to the demonstrators“?
- Is anywhere a online system available ? Portable? Under which system?

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