

Supplementary Material for the Paper: A Deep Ensemble Learning Method for Monaural Speech Separation

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APPENDIX

In this Supplementary Material, we report the detailed experimental results summarized in Tables I to VI in the main text.

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TABLE I

STOI (IN PERCENT) COMPARISON RESULTS OF 8 SPEECH SEPARATION TASKS WITH SINGLE-SNR SPEAKER-PAIR DEPENDENT TRAINING ON SSC CORPUS, CORRESPONDING TO TABLE I IN THE MAIN TEXT. FOR A GIVEN TASK, THE TWO NUMBERS IN PARENTHESES ARE THE IDENTIFIERS (IDS) OF THE TWO SPEAKERS IN SSC, IN WHICH THE FIRST NUMBER IS THE ID OF THE TARGET SPEAKER AND THE SECOND NUMBER IS THE ID OF THE INTERFERING SPEAKER. THE GENDERS OF THE TWO SPEAKERS ARE GIVEN OUTSIDE THE PARENTHESES.

		-12 dB	-9 dB	-6 dB	-3 dB	0 dB	3 dB	6 dB
Male-Male (1, 10)	Noisy	39.9	46.1	53.3	60.8	68.3	75.3	81.4
	DNN+Map	61.5	68.3	74.5	80.4	84.7	88.8	91.8
	DNN+IRM	63.3	68.5	73.7	79.4	83.5	87.6	90.8
	MCA+IRM	64.5	70.4	75.5	81.0	85.0	88.8	91.7
	MCS+IRM	63.7	70.8	76.2	81.9	85.7	89.6	92.4
	DNN+SA	67.6	72.7	77.8	82.7	86.7	90.7	93.2
	MCA+SA	66.5	74.3	79.3	84.1	87.8	91.3	93.8
	MCS+SA	69.3	72.2	79.7	84.4	88.2	91.5	93.9
Male-Male (14, 19)	Noisy	41.6	48.4	56.2	64.5	72.7	80.2	86.4
	DNN+Map	69.2	74.2	78.7	82.4	85.8	89.1	92.3
	DNN+IRM	70.4	74.2	78.4	82.0	85.5	89.2	92.0
	MCA+IRM	72.0	76.6	80.3	84.0	87.2	90.4	93.0
	MCS+IRM	71.5	76.9	80.5	84.2	87.5	90.5	93.2
	DNN+SA	73.3	78.0	82.1	85.6	88.4	91.3	93.9
	MCA+SA	75.3	79.6	83.5	86.9	89.6	92.1	94.4
	MCS+SA	75.4	79.9	83.7	87.3	89.9	92.3	94.4
Female-Male (4, 9)	Noisy	42.7	48.4	54.7	61.5	68.3	74.8	80.8
	DNN+Map	74.4	79.5	83.6	86.6	89.6	91.9	93.8
	DNN+IRM	75.4	80.1	84.0	87.2	89.8	92.4	93.9
	MCA+IRM	76.9	81.8	85.4	88.3	90.7	92.9	94.4
	MCS+IRM	76.9	81.9	85.6	88.5	91.0	93.3	94.9
	DNN+SA	79.4	84.0	87.1	90.1	92.3	94.0	95.7
	MCA+SA	80.0	84.7	87.8	90.6	92.8	94.5	96.0
	MCS+SA	80.7	85.4	88.4	90.9	93.0	94.6	96.0
Female-Male (15, 17)	Noisy	49.2	54.8	61.3	68.4	75.5	81.9	87.4
	DNN+Map	70.6	77.0	81.9	86.7	90.0	92.8	94.5
	DNN+IRM	70.6	75.9	80.7	85.9	89.7	92.7	94.7
	MCA+IRM	72.7	77.6	82.4	87.0	90.6	93.3	95.1
	MCS+IRM	73.0	78.3	83.0	87.3	90.8	93.5	95.2
	DNN+SA	76.3	80.6	84.8	89.0	92.1	94.4	96.3
	MCA+SA	77.6	81.8	86.0	89.8	92.7	94.7	96.4
	MCS+SA	78.1	82.3	86.5	90.0	92.7	94.8	96.2
Female-Female (7, 20)	Noisy	50.8	56.9	63.4	69.9	76.2	82.1	87.2
	DNN+Map	72.7	77.6	82.1	85.8	88.4	91.2	93.3
	DNN+IRM	71.8	76.7	81.1	84.7	88.1	90.7	93.1
	MCA+IRM	74.1	78.5	82.5	86.2	89.0	91.5	93.6
	MCS+IRM	74.4	79.0	82.7	86.5	89.2	91.9	93.9
	DNN+SA	79.2	83.0	86.4	89.3	91.6	93.6	95.3
	MCA+SA	80.4	84.1	87.3	89.9	92.2	94.0	95.6
	MCS+SA	80.7	84.5	87.7	90.1	92.4	94.2	95.7
Female-Female (22, 25)	Noisy	50.8	56.8	63.6	71.0	78.2	84.7	89.9
	DNN+Map	67.0	72.5	76.8	81.2	86.0	90.5	93.9
	DNN+IRM	65.9	69.8	73.7	78.4	83.2	88.2	92.1
	MCA+IRM	68.4	72.3	76.6	81.1	85.4	89.5	93.0
	MCS+IRM	68.0	71.9	76.9	81.3	85.7	89.5	93.3
	DNN+SA	73.6	77.8	81.2	84.7	88.7	92.6	95.5
	MCA+SA	75.3	79.5	82.8	86.1	89.8	93.3	95.9
	MCS+SA	75.6	80.0	83.0	86.4	90.0	93.4	96.0
Male-Female (8, 18)	Noisy	52.8	57.7	63.0	68.5	74.2	79.7	84.7
	DNN+Map	79.8	83.8	86.7	89.4	91.7	93.4	94.9
	DNN+IRM	82.3	85.1	87.7	90.5	92.4	94.0	95.2
	MCA+IRM	83.7	86.5	88.8	91.3	93.2	94.6	95.8
	MCS+IRM	83.6	86.4	88.9	91.3	93.5	94.8	96.0
	DNN+SA	85.0	87.6	90.3	92.4	94.2	95.5	96.7
	MCA+SA	85.7	88.3	91.0	93.1	94.7	95.9	97.0
	MCS+SA	85.5	88.1	91.1	90.6	94.8	96.0	97.1
Male-Female (26, 29)	Noisy	43.3	48.7	54.9	61.5	68.2	74.7	80.6
	DNN+Map	76.0	80.7	83.9	87.0	90.1	91.8	93.5
	DNN+IRM	77.3	81.5	84.9	88.0	90.5	92.5	94.1
	MCA+IRM	78.7	82.8	85.9	88.8	91.4	93.1	94.6
	MCS+IRM	78.4	82.7	85.8	89.0	91.6	93.3	94.9
	DNN+SA	80.5	84.3	87.7	90.4	92.6	94.3	95.7
	MCA+SA	81.7	85.4	88.5	91.0	93.0	94.7	96.0
	MCS+SA	81.9	85.5	88.9	91.2	93.2	94.8	96.0

TABLE II
STOI COMPARISON RESULTS BETWEEN THE SPEECH SEPARATION METHODS WITH SINGLE-SNR SPEAKER-PAIR DEPENDENT TRAINING ON SSC CORPUS WITH INSUFFICIENT CLEAN TRAINING DATA, CORRESPONDING TO TABLE II IN THE MAIN TEXT.

		-12 dB	-9 dB	-6 dB	-3 dB	0 dB	3 dB	6 dB
Male-Male (1, 10)	Noisy	39.9	46.1	53.3	60.8	68.3	75.3	81.4
	DNN+Map	50.1	54.4	59.6	64.2	69.1	73.3	77.1
	DNN+IRM	49.4	56.1	62.8	70.1	75.3	79.8	83.3
	MCA+IRM	49.2	56.3	63.6	70.6	76.6	80.8	84.6
	MCS+IRM	46.3	53.6	61.7	68.9	75.7	78.6	81.2
	DNN+SA	56.1	60.8	66.9	72.9	77.8	82.1	85.2
	MCA+SA	56.8	61.7	68.3	74.2	78.8	82.5	85.0
	MCS+SA	57.1	61.9	68.7	74.4	78.5	81.7	83.8
Male-Male (14, 19)	Noisy	41.6	48.4	56.2	64.5	72.7	80.2	86.4
	DNN+Map	53.9	58.9	64.5	69.0	74.4	78.9	82.3
	DNN+IRM	53.5	59.9	66.9	74.0	79.9	84.5	87.6
	MCA+IRM	52.7	59.9	67.6	74.7	80.7	85.3	88.2
	MCS+IRM	50.1	57.3	65.8	74.0	80.4	84.5	86.5
	DNN+SA	59.2	65.5	71.6	76.9	81.8	85.3	88.1
	MCA+SA	60.9	66.8	72.9	78.0	82.5	86.0	88.7
	MCS+SA	59.8	67.4	73.1	78.0	82.1	85.8	88.3
Female-Male (4, 9)	Noisy	42.7	48.4	54.7	61.5	68.3	74.8	80.8
	DNN+Map	56.9	62.5	68.8	73.4	77.3	80.5	83.2
	DNN+IRM	61.1	67.6	73.7	78.2	82.6	85.5	87.3
	MCA+IRM	60.8	67.4	73.8	78.7	82.9	85.6	87.6
	MCS+IRM	58.1	65.5	72.3	77.5	82.0	84.3	85.6
	DNN+SA	70.0	75.6	81.0	85.1	87.9	90.1	91.6
	MCA+SA	69.7	75.9	81.2	85.1	87.9	89.9	91.5
	MCS+SA	68.9	75.0	81.2	85.0	87.6	89.4	91.2
Female-Male (15, 17)	Noisy	49.2	54.8	61.3	68.4	75.5	81.9	87.4
	DNN+Map	60.0	65.1	70.8	75.1	78.8	82.0	84.3
	DNN+IRM	60.2	66.5	72.7	78.6	82.9	86.1	88.4
	MCA+IRM	59.8	66.8	73.3	78.8	83.1	86.2	88.3
	MCS+IRM	59.0	65.9	72.4	78.2	82.0	84.5	86.0
	DNN+SA	68.6	74.1	80.1	84.6	88.1	90.4	92.2
	MCA+SA	69.4	75.2	80.7	85.1	88.6	90.7	92.0
	MCS+SA	69.5	75.4	80.7	84.9	88.2	90.1	91.3
Female-Female (7, 20)	Noisy	50.8	56.9	63.4	69.9	76.2	82.1	87.2
	DNN+Map	57.2	63.1	68.0	72.3	74.9	77.9	79.7
	DNN+IRM	61.3	68.0	73.3	77.4	79.9	82.2	84.4
	MCA+IRM	62.7	69.2	74.2	77.9	80.7	82.8	84.2
	MCS+IRM	61.2	67.7	72.9	76.3	78.1	79.2	79.4
	DNN+SA	67.0	73.9	78.7	82.4	84.5	87.0	89.8
	MCA+SA	68.8	75.0	79.6	83.1	85.3	87.4	89.6
	MCS+SA	69.7	75.2	79.7	83.0	85.1	87.2	89.4
Female-Female (22, 25)	Noisy	50.8	56.8	63.6	71.0	78.2	84.7	89.9
	DNN+Map	50.8	56.0	61.4	68.4	74.5	80.0	84.6
	DNN+IRM	47.3	53.8	61.2	69.1	74.4	78.1	80.9
	MCA+IRM	47.5	54.4	62.1	70.0	75.6	79.1	81.2
	MCS+IRM	46.9	53.8	61.1	68.7	73.2	73.7	73.7
	DNN+SA	58.5	64.5	70.1	75.1	81.5	86.4	90.8
	MCA+SA	59.0	64.8	70.7	76.0	82.1	87.1	90.9
	MCS+SA	59.1	64.7	70.6	75.8	81.8	86.8	90.6
Male-Female (8, 18)	Noisy	52.8	57.7	63.0	68.5	74.2	79.7	84.7
	DNN+Map	66.0	70.9	75.7	80.1	83.0	85.9	87.7
	DNN+IRM	70.8	75.4	79.4	83.6	87.3	90.1	91.9
	MCA+IRM	70.0	74.3	79.0	83.3	87.1	90.1	92.2
	MCS+IRM	68.2	72.5	77.7	82.6	86.7	90.0	92.1
	DNN+SA	77.5	81.3	85.4	88.7	91.4	93.3	94.5
	MCA+SA	77.5	81.5	85.5	88.9	91.5	93.3	94.6
	MCS+SA	78.1	81.5	85.6	88.9	91.3	93.1	94.3
Male-Female (26, 29)	Noisy	43.3	48.7	54.9	61.5	68.2	74.7	80.6
	DNN+Map	61.9	68.1	74.1	78.3	81.4	84.0	85.6
	DNN+IRM	67.2	73.4	78.7	83.4	86.7	89.1	91.0
	MCA+IRM	66.7	73.0	78.5	83.5	86.9	89.5	91.4
	MCS+IRM	65.0	71.6	77.8	82.8	86.6	89.4	90.9
	DNN+SA	71.1	76.8	81.9	85.8	89.0	91.0	92.1
	MCA+SA	71.8	77.4	82.5	86.3	89.2	91.1	92.2
	MCS+SA	71.4	77.3	82.2	85.8	88.9	90.8	92.0

TABLE III
STOI COMPARISON RESULTS OF 8 SPEECH SEPARATION TASKS WITH MULTI-SNR SPEAKER-PAIR DEPENDENT TRAINING ON SSC CORPUS,
CORRESPONDING TO TABLE III IN THE MAIN TEXT.

		-12 dB	-9 dB	-6 dB	-3 dB	0 dB	3 dB	6 dB
Male-Male (1, 10)	Noisy	39.9	46.1	53.3	60.8	68.3	75.3	81.4
	DNN+Map	66.3	73.4	79.2	83.9	87.5	90.2	92.0
	DNN+IRM	64.0	70.8	77.0	82.2	86.4	89.7	92.1
	MCA+IRM	66.1	72.9	78.8	84.0	87.9	90.9	93.1
	MCS+IRM	66.6	74.1	80.7	85.9	89.6	92.3	94.3
	DNN+SA	70.6	76.4	81.2	85.1	88.3	90.8	92.8
	MCA+SA	72.6	78.1	82.7	86.4	89.3	91.6	93.4
	MCS+SA	73.6	79.5	84.1	87.6	90.4	92.7	94.3
Male-Male (14, 19)	Noisy	41.6	48.4	56.2	64.5	72.7	80.2	86.4
	DNN+Map	70.9	77.3	82.2	85.8	88.6	91.0	92.9
	DNN+IRM	67.8	73.9	79.1	83.5	87.3	90.4	92.9
	MCA+IRM	70.5	76.3	81.2	85.3	88.7	91.4	93.6
	MCS+IRM	71.1	77.4	82.5	86.7	89.9	92.3	94.1
	DNN+SA	74.9	80.3	84.3	87.3	89.8	92.0	94.0
	MCA+SA	77.5	82.4	86.0	88.6	90.8	92.8	94.6
	MCS+SA	78.1	83.2	86.9	89.6	91.7	93.5	95.2
Female-Male (4, 9)	Noisy	42.7	48.4	54.7	61.5	68.3	74.8	80.8
	DNN+Map	78.0	82.9	86.7	89.5	91.5	93.0	94.2
	DNN+IRM	76.2	81.8	86.2	89.5	92.0	93.7	94.9
	MCA+IRM	78.1	83.3	87.5	90.6	92.7	94.3	95.4
	MCS+IRM	79.0	84.5	88.6	91.4	93.4	94.9	95.9
	DNN+SA	82.4	86.3	89.1	91.3	93.0	94.4	95.5
	MCA+SA	83.5	87.2	89.8	91.9	93.5	94.8	95.9
	MCS+SA	84.1	87.8	90.5	92.4	94.0	95.2	96.2
Female-Male (15, 17)	Noisy	49.2	54.8	61.3	68.4	75.5	81.9	87.4
	DNN+Map	76.7	81.8	85.7	88.8	91.2	93.0	94.3
	DNN+IRM	72.2	77.9	82.8	87.1	90.4	92.9	94.6
	MCA+IRM	74.5	79.8	84.4	88.3	91.4	93.7	95.2
	MCS+IRM	75.6	81.3	85.9	89.4	92.2	94.1	95.5
	DNN+SA	78.9	83.8	87.5	90.6	92.9	94.8	96.1
	MCA+SA	81.0	85.3	88.6	91.4	93.5	95.2	96.4
	MCS+SA	81.7	86.0	89.2	91.9	93.9	95.5	96.6
Female-Female (7, 20)	Noisy	50.8	56.9	63.4	69.9	76.2	82.1	87.2
	DNN+Map	75.8	81.2	85.2	88.1	90.3	92.0	93.4
	DNN+IRM	73.1	78.8	83.4	86.8	89.5	91.6	93.2
	MCA+IRM	75.3	80.6	84.8	88.0	90.4	92.2	93.7
	MCS+IRM	76.7	82.3	86.4	89.2	91.3	92.9	94.2
	DNN+SA	80.3	84.9	88.1	90.5	92.4	94.0	95.4
	MCA+SA	82.0	86.1	89.0	91.2	93.0	94.5	95.7
	MCS+SA	82.4	86.7	89.6	91.8	93.4	94.8	96.0
Female-Female (22, 25)	Noisy	50.8	56.8	63.6	71.0	78.2	84.7	89.9
	DNN+Map	69.7	75.8	80.6	84.6	88.1	90.9	93.0
	DNN+IRM	64.6	71.3	76.9	81.7	86.0	89.6	92.4
	MCA+IRM	67.8	74.2	79.6	83.9	87.7	90.9	93.4
	MCS+IRM	69.6	76.3	81.6	85.7	89.0	91.7	93.8
	DNN+SA	75.3	80.4	84.3	87.2	89.9	92.5	94.5
	MCA+SA	77.6	82.5	85.9	88.7	91.1	93.4	95.3
	MCS+SA	78.9	84.1	87.6	90.0	92.2	94.3	95.9
Male-Female (8, 18)	Noisy	52.8	57.7	63.0	68.5	74.2	79.7	84.7
	DNN+Map	83.1	86.9	89.8	91.9	93.5	94.7	95.6
	DNN+IRM	81.3	85.7	89.2	91.8	93.8	95.2	96.2
	MCA+IRM	82.6	86.8	90.1	92.6	94.4	95.8	96.7
	MCS+IRM	83.1	87.4	90.7	93.1	94.9	96.1	97.0
	DNN+SA	86.7	89.6	91.7	93.5	94.8	95.8	96.7
	MCA+SA	87.8	90.5	92.5	94.1	95.3	96.3	97.0
	MCS+SA	87.9	90.7	92.8	94.4	95.6	96.6	97.3
Male-Female (26, 29)	Noisy	43.3	48.7	54.9	61.5	68.2	74.7	80.6
	DNN+Map	78.7	83.8	87.4	90.0	91.9	93.4	94.5
	DNN+IRM	76.7	82.4	86.8	90.1	92.5	94.2	95.4
	MCA+IRM	78.8	83.9	87.9	91.0	93.2	94.7	95.8
	MCS+IRM	79.1	84.6	88.7	91.7	93.8	95.2	96.2
	DNN+SA	82.3	86.2	89.2	91.5	93.2	94.5	95.5
	MCA+SA	83.9	87.5	90.2	92.2	93.8	94.9	95.9
	MCS+SA	84.1	87.9	90.6	92.6	94.1	95.3	96.3

TABLE IV
STOI COMPARISON RESULTS OF 8 SPEECH SEPARATION TASKS WITH MULTI-SNR SPEAKER-PAIR DEPENDENT TRAINING ON SSC CORPUS WITH INSUFFICIENT CLEAN TRAINING DATA, CORRESPONDING TO TABLE IV IN THE MAIN TEXT.

		-12 dB	-9 dB	-6 dB	-3 dB	0 dB	3 dB	6 dB
Male-Male (1, 10)	Noisy	39.9	46.1	53.3	60.8	68.3	75.3	81.4
	DNN+Map	44.9	51.5	57.9	63.7	68.4	72.1	74.8
	DNN+IRM	46.7	54.4	62.0	68.9	74.8	79.5	82.9
	MCA+IRM	47.7	55.6	63.3	70.2	76.0	80.4	83.5
	MCS+IRM	46.3	54.5	62.3	69.1	74.8	79.0	81.8
	DNN+SA	51.6	59.0	65.8	72.0	77.2	81.3	84.2
	MCA+SA	53.2	60.6	67.4	73.3	78.1	81.8	84.4
	MCS+SA	53.7	61.0	67.6	73.3	77.8	81.2	83.5
Male-Male (14, 19)	Noisy	41.6	48.4	56.2	64.5	72.7	80.2	86.4
	DNN+Map	48.5	55.8	62.8	69.0	74.2	78.2	80.9
	DNN+IRM	49.0	57.2	65.5	73.2	79.7	84.6	88.1
	MCA+IRM	49.5	58.1	66.7	74.5	80.8	85.4	88.7
	MCS+IRM	48.7	57.5	66.3	74.1	80.5	85.0	88.0
	DNN+SA	55.1	63.0	70.3	76.5	81.6	85.6	88.6
	MCA+SA	57.1	64.9	71.9	77.8	82.6	86.3	89.0
	MCS+SA	58.5	65.9	72.4	77.9	82.3	85.8	88.4
Female-Male (4, 9)	Noisy	42.7	48.4	54.7	61.5	68.3	74.8	80.8
	DNN+Map	57.3	64.3	70.1	74.7	77.9	80.1	81.5
	DNN+IRM	59.3	67.2	74.2	79.9	84.1	87.0	88.8
	MCA+IRM	59.6	67.7	74.6	80.3	84.5	87.3	89.1
	MCS+IRM	58.2	67.2	74.8	80.7	84.8	87.5	88.9
	DNN+SA	68.5	75.7	81.2	85.2	88.1	90.2	91.6
	MCA+SA	69.4	76.4	81.8	85.7	88.4	90.2	91.5
	MCS+SA	68.9	76.3	81.8	85.6	88.2	89.9	91.0
Female-Male (15, 17)	Noisy	49.2	54.8	61.3	68.4	75.5	81.9	87.4
	DNN+Map	59.5	66.0	71.3	75.3	78.1	80.0	81.1
	DNN+IRM	60.6	67.6	74.0	79.4	83.7	86.9	89.1
	MCA+IRM	61.1	68.2	74.5	79.9	84.0	86.9	89.0
	MCS+IRM	60.0	67.8	74.4	79.8	83.7	86.3	88.0
	DNN+SA	68.3	74.7	80.0	84.5	87.9	90.3	91.9
	MCA+SA	70.1	76.2	81.3	85.4	88.5	90.6	92.1
	MCS+SA	70.2	76.1	81.1	85.1	88.0	89.9	91.2
Female-Female (7, 20)	Noisy	50.8	56.9	63.4	69.9	76.2	82.1	87.2
	DNN+Map	59.2	65.1	69.6	72.9	74.9	76.1	76.9
	DNN+IRM	61.5	68.4	74.1	78.4	81.5	83.6	85.1
	MCA+IRM	62.9	69.5	74.8	78.9	81.7	83.6	84.9
	MCS+IRM	61.5	68.4	73.9	77.9	80.5	81.9	82.7
	DNN+SA	66.7	73.2	78.5	82.6	85.6	87.7	89.4
	MCA+SA	68.5	74.7	79.7	83.3	86.0	87.9	89.3
	MCS+SA	68.9	74.8	79.6	83.1	85.6	87.3	88.6
Female-Female (22, 25)	Noisy	50.8	56.8	63.6	71.0	78.2	84.7	89.9
	DNN+Map	47.7	54.4	61.7	68.7	74.4	78.7	81.6
	DNN+IRM	45.4	53.1	61.2	68.9	75.1	79.3	81.9
	MCA+IRM	46.2	54.1	62.4	70.2	76.4	80.5	83.1
	MCS+IRM	45.8	53.8	62.2	69.8	75.5	79.1	80.9
	DNN+SA	55.1	62.8	70.0	76.4	81.8	86.0	89.0
	MCA+SA	55.2	63.1	70.6	77.2	82.5	86.6	89.4
	MCS+SA	55.5	63.2	70.4	76.9	82.0	86.0	88.7
Male-Female (8, 18)	Noisy	52.8	57.7	63.0	68.5	74.2	79.7	84.7
	DNN+Map	67.7	73.3	77.7	80.9	83.1	84.5	85.5
	DNN+IRM	68.1	74.5	80.2	84.8	88.3	90.7	92.3
	MCA+IRM	67.7	74.2	80.0	84.8	88.4	90.8	92.4
	MCS+IRM	67.2	74.1	80.1	84.8	88.3	90.6	92.0
	DNN+SA	76.3	81.5	85.7	89.0	91.4	93.0	94.1
	MCA+SA	77.8	82.7	86.6	89.6	91.7	93.2	94.2
	MCS+SA	78.0	82.7	86.6	89.4	91.5	92.8	93.7
Male-Female (26, 29)	Noisy	43.3	48.7	54.9	61.5	68.2	74.7	80.6
	DNN+Map	63.7	70.7	76.0	79.4	81.6	83.0	83.9
	DNN+IRM	65.7	73.2	79.3	84.0	87.6	90.1	91.7
	MCA+IRM	66.1	73.6	79.8	84.5	88.0	90.4	92.0
	MCS+IRM	65.6	73.4	79.7	84.5	87.9	90.1	91.5
	DNN+SA	70.0	76.7	82.0	85.9	88.7	90.6	91.9
	MCA+SA	72.4	78.5	83.3	86.8	89.2	90.8	91.9
	MCS+SA	72.5	78.6	83.2	86.5	88.8	90.3	91.3

TABLE V

STOI COMPARISON RESULTS OF 2 SPEECH SEPARATION TASKS WITH TARGET INDEPENDENT TRAINING ON IEEE-TIMIT CORPUS, CORRESPONDING TO TABLE V IN THE MAIN TEXT.

		-12 dB	-9 dB	-6 dB	-3 dB	0 dB	3 dB	6 dB
MaleIEEE-MaleTIMIT	Noisy	48.8	54.6	60.9	67.5	73.8	79.6	84.7
	DNN+Map	71.7	76.2	80.2	83.8	86.9	89.7	91.9
	DNN+IRM	70.5	75.9	80.3	84.2	87.7	90.7	93.1
	MCA+IRM	73.2	77.9	81.8	85.4	88.7	91.4	93.6
	MCS+IRM	74.3	79.2	83.3	86.8	89.9	92.3	94.3
	DNN+SA	73.4	78.2	82.1	85.4	88.3	90.8	92.9
	MCA+SA	75.4	79.9	83.5	86.6	89.3	91.6	93.5
	MCS+SA	75.5	80.2	84.0	87.2	89.9	92.2	94.0
	MCA+IRM+SA	76.1	80.4	83.9	87.0	89.8	92.2	94.1
MCS+IRM+SA	76.5	81.0	84.6	87.6	90.3	92.6	94.4	
MaleIEEE-FemaleTIMIT	Noisy	51.4	57.0	63.0	69.2	75.2	80.7	85.6
	DNN+Map	76.0	80.0	83.4	86.5	89.2	91.4	93.2
	DNN+IRM	76.7	81.4	85.3	88.3	90.9	92.9	94.5
	MCA+IRM	78.3	82.6	86.3	89.3	91.7	93.6	95.1
	MCS+IRM	80.0	84.2	87.7	90.4	92.5	94.2	95.6
	DNN+SA	79.2	82.9	86.0	88.6	90.9	92.8	94.4
	MCA+SA	80.9	84.4	87.2	89.7	91.7	93.5	94.9
	MCS+SA	81.0	84.7	87.6	90.1	92.2	93.9	95.3
	MCA+IRM+SA	81.4	85.0	87.9	90.4	92.5	94.2	95.5
MCS+IRM+SA	81.5	85.3	88.4	90.8	92.8	94.4	95.6	
FemaleIEEE-MaleTIMIT	Noisy	46.7	53.0	59.9	66.9	73.7	79.9	85.3
	DNN+Map	75.2	79.9	84.1	87.5	90.2	92.3	93.9
	DNN+IRM	73.1	79.1	84.1	88.0	91.1	93.4	95.0
	MCA+IRM	74.9	80.5	85.1	88.8	91.6	93.8	95.3
	MCS+IRM	76.1	81.9	86.5	89.9	92.5	94.4	95.8
	DNN+SA	77.1	82.1	86.0	89.0	91.3	93.2	94.6
	MCA+SA	78.1	83.0	86.8	89.7	91.9	93.7	95.0
	MCS+SA	78.7	83.8	87.7	90.4	92.5	94.1	95.4
	MCA+IRM+SA	78.3	83.3	87.1	90.1	92.5	94.3	95.6
MCS+IRM+SA	78.8	84.1	87.9	90.7	92.9	94.7	96.0	
FemaleIEEE-FemaleTIMIT	Noisy	49.8	56.0	62.6	69.4	75.9	81.8	86.8
	DNN+Map	66.9	70.9	74.8	79.0	83.4	87.4	90.5
	DNN+IRM	64.2	69.1	74.1	79.2	84.3	88.6	91.8
	MCA+IRM	66.7	71.5	76.2	81.1	85.6	89.6	92.6
	MCS+IRM	70.0	75.2	79.7	83.9	87.9	91.1	93.6
	DNN+SA	70.2	73.4	77.0	81.1	85.2	88.9	91.7
	MCA+SA	71.7	75.3	79.0	82.8	86.6	89.8	92.4
	MCS+SA	72.2	76.2	80.2	84.1	87.8	91.0	93.3
	MCA+IRM+SA	71.2	75.1	79.0	83.1	87.0	90.4	93.1
MCS+IRM+SA	72.6	76.7	80.5	84.3	88.1	91.3	93.8	

TABLE VI
SDR COMPARISON RESULTS OF 2 SPEECH SEPARATION TASKS WITH TARGET INDEPENDENT TRAINING ON IEEE-TIMIT CORPUS, CORRESPONDING TO TABLE VI IN THE MAIN TEXT.

		-12 dB	-9 dB	-6 dB	-3 dB	0 dB	3 dB	6 dB
MaleIEEE-MaleTIMIT	Noisy	-10.73	-8.24	-5.54	-2.70	0.21	3.16	6.14
	DNN+Map	1.96	3.61	5.20	6.73	8.32	10.00	11.73
	DNN+IRM	2.05	3.72	5.35	7.05	8.86	10.78	12.72
	MCA+IRM	2.51	4.06	5.63	7.32	9.13	11.01	12.92
	MCS+IRM	3.16	4.96	6.65	8.30	10.03	11.79	13.57
	DNN+SA	3.39	4.90	6.34	7.87	9.55	11.33	13.17
	MCA+SA	3.80	5.24	6.67	8.22	9.88	11.66	13.51
	MCS+SA	3.82	5.32	6.78	8.37	10.05	11.85	13.71
	MCA+IRM+SA	3.58	5.01	6.47	8.06	9.78	11.59	13.46
	MCS+IRM+SA	3.83	5.33	6.79	8.39	10.09	11.90	13.79
MaleIEEE-FemaleTIMIT	Noisy	-10.81	-8.30	-5.59	-2.74	0.18	3.14	6.12
	DNN+Map	4.14	5.52	6.85	8.26	9.76	11.24	12.73
	DNN+IRM	4.36	6.18	7.95	9.53	10.98	12.43	13.94
	MCA+IRM	4.61	6.41	8.16	9.77	11.27	12.73	14.16
	MCS+IRM	5.71	7.33	8.92	10.45	11.94	13.42	14.80
	DNN+SA	6.20	7.43	8.80	10.26	11.77	13.27	14.76
	MCA+SA	6.57	7.76	9.09	10.54	12.01	13.48	14.95
	MCS+SA	6.60	7.84	9.22	10.69	12.20	13.74	15.27
	MCA+IRM+SA	6.04	7.49	8.99	10.49	11.96	13.41	14.84
	MCS+IRM+SA	6.54	7.80	9.18	10.65	12.16	13.71	15.24
FemaleIEEE-MaleTIMIT	Noisy	-10.94	-8.37	-5.62	-2.75	0.17	3.14	6.11
	DNN+Map	3.62	5.25	6.77	8.33	9.86	11.33	12.78
	DNN+IRM	3.56	5.35	7.09	8.81	10.61	12.35	13.97
	MCA+IRM	4.10	5.79	7.45	9.13	10.83	12.54	14.20
	MCS+IRM	4.47	6.37	8.18	9.93	11.57	13.20	14.79
	DNN+SA	5.16	6.75	8.31	9.79	11.20	12.70	14.32
	MCA+SA	5.58	7.07	8.57	10.04	11.50	13.03	14.65
	MCS+SA	5.54	7.08	8.64	10.17	11.66	13.23	14.87
	MCA+IRM+SA	5.32	6.85	8.38	9.92	11.47	13.07	14.70
	MCS+IRM+SA	5.63	7.18	8.76	10.28	11.79	13.38	15.08
FemaleIEEE-FemaleTIMIT	Noisy	-10.97	-8.40	-5.64	-2.78	0.16	3.12	6.10
	DNN+Map	0.55	1.64	2.65	4.01	6.02	8.38	10.74
	DNN+IRM	0.38	1.28	2.85	4.74	7.08	9.48	11.81
	MCA+IRM	0.06	1.84	3.55	5.42	7.63	9.99	12.23
	MCS+IRM	1.37	3.32	5.06	6.78	9.01	11.29	13.27
	DNN+SA	2.97	3.47	4.16	5.58	7.81	10.28	12.53
	MCA+SA	3.06	3.76	4.72	6.28	8.39	10.69	12.86
	MCS+SA	3.12	3.99	5.10	6.76	8.94	11.28	13.47
	MCA+IRM+SA	2.15	3.27	4.53	6.19	8.32	10.64	12.83
	MCS+IRM+SA	3.23	4.10	5.20	6.85	9.00	11.41	13.62