This folder contains implementations of objective quality measures
(Chapter 11):

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    MATLAB file Description                                 Reference
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    comp_snr.m  Overall and segmental SNR                     [1]

    comp_wss.m  Weighted-spectral slope metric                [2]

    comp_llr.m  Likelihood-ratio measure                      [3]

    comp_is.m   Itakura-Saito measure                         [3]
    comp_cep.m  Cepstral distance measure                     [4]
    comp_fwseg  Freq. weighted segm. SNR (fwSNRseg)           [5],Chap 11

    comp_fwseg_variant   Frequency-variant fwSNRseg measure   Chap 11

    comp_fwseg_mars      Frequency variant fwSNRseg measure   Chap 11
            based on MARS analysis

    pesq.m      PESQ measure (narrowband)   ITU-T P.862       [6]
                PESQ measure (wideband)     ITU-T P.862.2     [7]

    composite.m A composite measure                           [8]


    addnoise_asl.m  Adds noise to the clean signal at specified SNR
            based on active speech level.                     [9]

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USAGE

>>   [snr_mean, segsnr_mean]= compSNR(cleanFile.wav, enhdFile.wav);
       where 'snr_mean' is the global overall SNR and 'segsnr_mean' is the
       segmental SNR.

>>   wss_mean = comp_wss(cleanFile.wav, enhancedFile.wav);

>>   llr_mean= comp_llr(cleanFile.wav, enhancedFile.wav);

>>    is_mean = comp_is(cleanFile.wav, enhancedFile.wav);

>>    cep_mean = comp_cep(cleanFile.wav, enhancedFile.wav);

>>    fwSNRseg = comp_fwseg(cleanFile.wav, enhancedFile.wav);

>>    [SIG,BAK,OVL]=comp_fwseg_variant(cleanFile.wav, enhancedFile.wav);
      where   'SIG' is the predicted rating of speech distortion,
          'BAK' is the predicted rating of background noise distortion,
          'OVL' is the predicted rating of overall quality.

>>    [SIG,BAK,OVL]=comp_fwseg_mars(cleanFile.wav, enhancedFile.wav);

>>    pesq_val = pesq(cleanFile.wav, enhancedFile.wav);
            Only sampling frequencies of 8000 Hz or 16000 Hz are supported.

>>    [Csig,Cbak,Covl]=composite(cleanFile.wav, enhancedFile.wav);
      where   'Csig' is the predicted rating of speech distortion,
          'Cbak' is the predicted rating of background noise distortion,
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'Covl' is the predicted rating of overall quality.

>>   addnoise_asl(cleanfile.wav, noisefile.wav, outfile.wav, SNRlevel)

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    Recommendation P. 56

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