1 Matlab Help on specgram

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 SPECGRAM Calculate spectrogram from signal.
        B = SPECGRAM(A,NFFT,Fs,WINDOW,NOVERLAP) calculates the spectrogram for
        the signal in vector A.  SPECGRAM splits the signal into overlapping
        segments, windows each with the WINDOW vector and forms the columns of
        B with their zero-padded, length NFFT discrete Fourier transforms.  Thus
        each column of B contains an estimate of the short-term, time-localized
        frequency content of the signal A.  Time increases linearly across the
        columns of B, from left to right.  Frequency increases linearly down
        the rows, starting at 0.  If A is a length NX complex signal, B is a
        complex matrix with NFFT rows and
             k = fix((NX-NOVERLAP)/(length(WINDOW)-NOVERLAP))
        columns.  If A is real, B still has k columns but the higher frequency
        components are truncated (because they are redundant); in that case,
        SPECGRAM returns B with NFFT/2+1 rows for NFFT even and (NFFT+1)/2 rows
        for NFFT odd.  If you specify a scalar for WINDOW, SPECGRAM uses a
        Hanning window of that length.  WINDOW must have length smaller than
        or equal to NFFT and greater than NOVERLAP.  NOVERLAP is the number of
        samples the sections of A overlap.  Fs is the sampling frequency
        which does not effect the spectrogram but is used for scaling plots.

        [B,F,T] = SPECGRAM(A,NFFT,Fs,WINDOW,NOVERLAP) returns a column of
        frequencies F and one of times T at which the spectrogram is computed.
        F has length equal to the number of rows of B, T has length k. If you
        leave Fs unspecified, SPECGRAM assumes a default of 2 Hz.

        B = SPECGRAM(A) produces the spectrogram of the signal A using default
        settings; the defaults are NFFT = minimum of 256 and the length of A, a
        Hanning window of length NFFT, and NOVERLAP = length(WINDOW)/2.  You
        can tell SPECGRAM to use the default for any parameter by leaving it
        off or using [] for that parameter, e.g. SPECGRAM(A,[],1000)

        SPECGRAM with no output arguments plots the absolute value of the
        spectrogram in the current figure, using IMAGESC(T,F,20*log10(ABS(B))),
        AXIS XY, COLORMAP(JET) so the low frequency content of the first
        portion of the signal is displayed in the lower left corner of the axes.

        See also PSD
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