established by a single Fourier transform by transforming the composite polynomial C(P(z), Q(z)).

18. Information encoder according to one of the claims 6 to 17, wherein the converter comprises a limiting device for limiting the numerical range of the spectra of the elongated polynomials $P_e(z)$ and $Q_e(z)$ or one or more polynomials derived from the elongated polynomials $P_e(z)$ and $Q_e(z)$ by multiplying the elongated polynomials $P_e(z)$ and $Q_e(z)$ with a filter polynomial B(z), wherein the filter polynomial B(z) is symmetric and does not have any roots on a unit circle.

19. Method for operating an information encoder for encoding an information signal, the method comprises the steps of:

analyzing the information signal in order to obtain linear prediction coefficients of a predictive polynomial A(z);

converting the linear prediction coefficients of the predictive polynomial A(z) to frequency values of a spectral frequency representation of the predictive polynomial A(z), wherein the frequency values are determined by analyzing a pair of polynomials P(z) and Q(z) being defined as

$$P(z) = A(z) + z^{-m-l} A(z^{-1}) \text{ and}$$

$$Q(z) = A(z) - z^{-m-l} A(z^{-1}),$$

wherein m is an order of the predictive polynomial A(z) and l is greater or equal to zero, wherein the frequency values are obtained by establishing a strictly real spectrum derived from P(z) and a strictly imaginary spectrum from Q(z) and by identifying zeros of the strictly real spectrum derived from P(z) and the strictly imaginary spectrum derived from Q(z);