Continuous-time integrating filter with minimum phase variation, and bandpass ΣΔ modulator using such a filter

The disclosure pertains to continuous-time filtering. More particularly, it relates to filtering in a feedback control loop, for example in a sigma-delta (ΣΔ) modulator. The making of a filter for this type of application comes up against a major problem linked to the relativity between the amplitude and phase responses. This limits the possibilities of choice in order to take steps against the instability of the loop. A continuous-time filter with minimum phase variation carries out the bandpass integration of the signal presented at its input. The making of the continuous-time filter as a bandpass integrator raises the problem of achieving a compromise between gain variations and phase variations close to the –1 critical point, This compromise must lead to the stability of the loop. This problem is resolved by using a continuous-time bandpass integrating filter comprising at least one resonance device with minimum phase variation.

[Figure 14]

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