Experimentally, it is quite difficult, *e.g.* by using only the ***visual*** information of successive water drop time differences $t_{n+1} - t_n$, as displayed on an oscilloscope trace to "find"/locate the flow-regimes of non-linear/chaotic dynamics associated with a "leaky" water faucet. However, we discovered that if we real-time converted the successive water drop time differences $t_{n+1} - t_n$ to audio musical frequencies via $f = 1/\tau = 1/(t_{n+1} - t_n)$ {*i.e.* low (high) pitches = long (short) time differences, respectively}, that by ***listening*** to the sequence of notes (time differences), it became ***extremely*** easy to "home" in/determine the chaotic drip regimes! For the periodic drip regime, successive notes were the same pitch – the "music" of the periodic drip regime was thus very ***boring*** – it didn't go anywhere... On the other hand, in the chaotic drip regime, the sequence of notes (time differences) amazingly sounded ***very*** musical – very much like ***jazz*** music! However, from the above discussion(s), one can easily understand that this is indeed ***no*** accident – the fractal $1/f^{\beta}$ "noise" nature of our music is indeed ***intimately*** related to the fractal $1/f^{\beta}$ nature of a chaotically dripping/leaky water faucet! The PSD function $S_V(f)$ shows a $\sim 1/f^1$ behavior associated with the fluctuations in the leaky water faucet time differences, indicating that long-range temporal correlations do indeed exist:

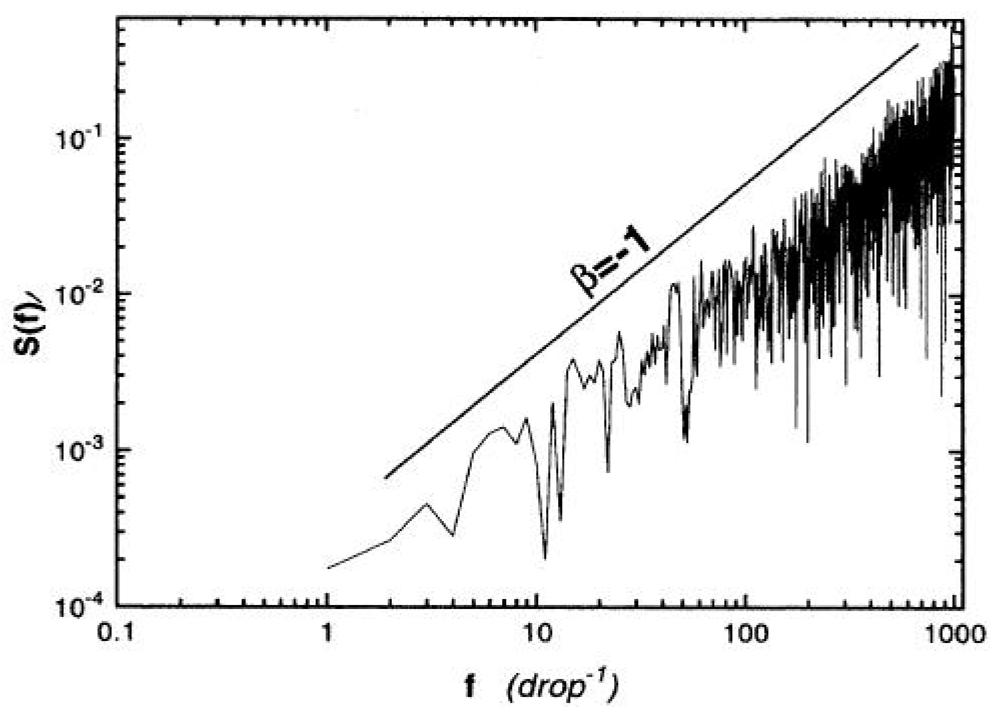

FIG. 4. Power spectra $S(f)$ for the interval increments for the time series presented in Fig. 1. A straight line corresponding to the $\beta = -1$ curve is presented for comparison.