

Title (en)
METHOD FOR CONFIGURING A DIGITAL FILTER FOR ATTENUATING A FREQUENCY ASSOCIATED WITH A TORSION MODE OF A POWER TRANSMISSION LINE OF A TURBINE ENGINE

Title (de)
VERFAHREN ZUR KONFIGURATION EINES DIGITALEN FILTERS ZUR DÄMPFUNG EINER EINEM TORSIONSMODUS EINER STROMÜBERTRAGUNGSLEITUNG EINER TURBINENMASCHINE ZUGEORDNETEN FREQUENZ

Title (fr)
PROCEDE DE PARAMETRAGE D'UN FILTRE NUMERIQUE POUR L'ATTENUATION D'UNE FREQUENCE ASSOCIEE A UN MODE DE TORSION D'UNE LIGNE DE TRANSMISSION DE PUISSANCE D'UN TURBOMOTEUR

Publication
EP 3970035 A1 20220323 (FR)

Application
EP 20715900 A 20200406

Priority
• FR 1904965 A 20190513
• EP 2020059808 W 20200406

Abstract (en)
[origin: WO202229058A1] The invention concerns a method for configuring a digital filter for attenuating a torsion mode of a power transmission line of an aircraft turbine engine (1), the mode being associated with a frequency F_T falling within a confidence interval le , the digital filter being a low-pass filter and: - described by a causal transfer function that is stable and equal to the quotient $N(z)/D(z)$, - intended to be integrated into a pre-existing control loop of the turbine engine (1), so as to filter signals sampled at a frequency F_E , the loop being closed and having a gain increased, in absolute value, by a value V in its bandwidth. Moreover, the method includes: - a step (100) of calculating zeros of $N(z)$, such that the filter attenuates the frequency F_T , - a step (200) of updating the zeros of $N(z)$, such that the gain of the filter satisfies, in the interval le , a first gain margin, - a step (300) of determining poles of $D(z)$, such that, in the bandwidth of the loop: - the phase of the filter satisfies a phase margin, - the gain of the filter satisfies a second gain margin.

IPC 8 full level
G06F 17/13 (2006.01); **B64C 27/00** (2006.01); **F04D 29/66** (2006.01); **G01H 1/10** (2006.01); **G05D 19/00** (2006.01)

CPC (source: EP US)
B64C 27/00 (2013.01 - US); **B64C 27/001** (2013.01 - EP); **F01D 1/00** (2013.01 - EP); **F01D 21/003** (2013.01 - EP); **F01D 25/04** (2013.01 - US); **F04D 27/0261** (2013.01 - EP); **F04D 29/668** (2013.01 - EP US); **G01H 1/10** (2013.01 - EP US); **G05D 19/02** (2013.01 - EP US); **G06F 17/13** (2013.01 - EP); **H04B 3/542** (2013.01 - US); **F05D 2220/323** (2013.01 - US); **F05D 2220/329** (2013.01 - US); **F05D 2260/80** (2013.01 - EP); **F05D 2260/96** (2013.01 - US); **Y02B 30/70** (2013.01 - EP)

Citation (search report)
See references of WO 202229058A1

Designated contracting state (EPC)
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)
BA ME

DOCDB simple family (publication)
WO 202229058 A1 20201119; CN 114127716 A 20220301; EP 3970035 A1 20220323; FR 3096159 A1 20201120; FR 3096159 B1 20210910; US 2022220979 A1 20220714

DOCDB simple family (application)
EP 2020059808 W 20200406; CN 202080050965 A 20200406; EP 20715900 A 20200406; FR 1904965 A 20190513; US 202017610486 A 20200406