

Title (en)
STABILISING OPTICAL FREQUENCY COMBS

Title (de)
STABILISIEREN OPTISCHER FREQUENZKÄMME

Title (fr)
PEIGNES DE FRÉQUENCES OPTIQUE STABILISÉS

Publication
EP 3262727 A1 20180103 (DE)

Application
EP 16707389 A 20160226

Priority
• DE 102015002559 A 20150227
• EP 2016000335 W 20160226

Abstract (en)
[origin: WO2016134853A1] The invention relates to a method for operating a laser device (1), by means of which an optical frequency comb can be stabilized, wherein the frequencies of the modes thereof are describable by the formula $f_m = m \times f_{\text{rep}} + f_0$, where f_{rep} is a mode spacing, f_0 is an offset frequency and m is a natural number. At least one signal (S1, S2, S3, S4) is determined, which correlates with an actual value of a degree of freedom (F), wherein the degree of freedom (F) is a linear combination of the offset frequency f_0 and the mode spacing f_{rep} of the frequency comb. The actual value of the degree of freedom (F) is set in a predetermined capture range (F) of a second control unit (40) using a first control unit (10) on the basis of the signal. As soon as the capture range ($\Delta F_{\text{capture}}$) of the second control unit (40) is reached, the second control unit (40) is activated and the actual value is regulated to an intended value (F_{intended}) with the aid of the second control unit (40).

IPC 8 full level
H01S 3/094 (2006.01); **H01S 3/11** (2006.01); **H01S 3/13** (2006.01); **H01S 3/131** (2006.01); **H01S 3/137** (2006.01); **H01S 3/139** (2006.01); **H01S 3/16** (2006.01)

CPC (source: EP US)
H01S 3/1106 (2013.01 - EP US); **H01S 3/1305** (2013.01 - EP US); **H01S 3/1307** (2013.01 - EP US); **H01S 3/1312** (2013.01 - EP US); **H01S 3/137** (2013.01 - EP US); **H01S 3/139** (2013.01 - EP US); **H01S 3/094038** (2013.01 - EP US); **H01S 3/1394** (2013.01 - EP US); **H01S 3/1625** (2013.01 - EP US); **H01S 3/1636** (2013.01 - EP US)

Citation (search report)
See references of WO 2016134853A1

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)
DE 102015002559 A1 20160901; CN 107567670 A 20180109; CN 107567670 B 20200303; EP 3262727 A1 20180103; US 10164402 B2 20181225; US 2018034233 A1 20180201; WO 2016134853 A1 20160901

DOCDB simple family (application)
DE 102015002559 A 20150227; CN 201680024551 A 20160226; EP 16707389 A 20160226; EP 2016000335 W 20160226; US 201615552941 A 20160226