



SDI Review Form 1.6

Journal Name:	Current Journal of Applied Science and Technology
Manuscript Number:	Ms_CJAST_38422
Title of the Manuscript:	Design of Adaptive Control System Based on Model Reference Stick Slip Vibration
Type of the Article	Original research papers

General guideline for Peer Review process:

This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty**', provided the manuscript is scientifically robust and technically sound. To know the complete guideline for Peer Review process, reviewers are requested to visit this link:

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PART 1: Review Comments

	Reviewer's comment	Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
Compulsory REVISION comments	1. Figures 6(a) and 7(a) look different. For instance, in Figure 7(a), residual vibration can be seen even after the control is started. Please explain the differences between two figures and the reason, in the text. 2. Nomenclature should be provided. There are lots of undefined parameters.	Thank you for taking the time to review my article, I explain the problems in the article as follows: 1、 Figure 6 (a) is a simulation diagram, is completed in an ideal state. However, the data in Figure 7 (a) is the motor speed in the actual drilling process. In the actual system, there will be various kinds of interference, so the motor speed will fluctuate under normal conditions. The magnitude of the main speed reference in Figure 6 (a) is empirically chosen and is given in international units, rad/s. However, Figure 7 (a) of the motor speed is the specific value of this experiment, the unit is RPM. Motor speed divided by the transmission ratio is the actual system of the main given speed. Between the two units can be converted to each other, $1\text{rad/s} = \pi/30\text{rpm}$. 2、 I am sorry for the fact that there are many parameters in this article that I did not define. To this end, I added the following: In the figure, y_r and y_m are the reference model input and the reference model output, respectively. k_0 is adjustable gain. F_1 and F_2 are two auxiliary signal generators. c, d, d_0 are adjustable parameter vector. e_1 is the system generalized state error. G is the $n \times n$ matrix. v_1 and v_2 are the state vectors of the auxiliary signal generator, respectively. w_1 and w_2 are the output of two auxiliary generators respectively.
Minor REVISION comments	1. There are multiple definitions of x. (a) page 2, line 49 (b) page 4, line 85 (c) page 5, line 99 2. The meanings of suffixes (p, c, m, r, b) are unclear. The reviewer does not understand the differences among x_p, x_m, x_{mc}, and x. The same problem arises among A_p, A_c, and A. Please provide the meaning of all parameters including suffixes, in the text. 3. There is typo. (a) Page 6, line 123; 1/2 may be -1/2 (negative). 4. There are lots of parameters that are not used. For instance, matrixes A and B (page 4, line 90) are not used.	1、 I can't find x in the page 4 line 85 and page 5 line 99. I will explain all the x in my paper. (1) In page 2, line 49, this x represents the state variable of the drill string system. (2) In page 4, line 80, this x_p represents the state vector in the general control system (3) In page 4, line 86, This x represents the state variables in this design of the control system, because this control system is speed control, so there is no speed variable in the state of this one. (4) In page 5, line 100, this x represents the adjustable system augmented state vector. (5) In page 5, line 109, this x_m represents the reference model state vector. (6) In page 5, line 109, this x_{mc} represents the reference model augmented state vector. 2、 I explain all the suffixes appearing in the article as follows: (1) A_p is an $n \times n$ matrix in the system state equation, and suffix p in the text x_p, y_p, b_p, W_p denotes the plant. (2) A_c is an $n \times n$ matrix in an augmented state equation of an adjustable system. The suffix c of x_c, y_c, b_c in this paper all means compatible. (3) The subscript m in the article y_m, x_m is the model; T_m in the m that is motor; (4) The subscripts r in the article $J_r, c_r, \varphi_r, \omega_r$ means rotary. (5) The subscripts b in the article $J_b, c_b, \varphi_b, \omega_b$ means bottom. 3、 I'm sorry to make this mistake. I write the right one in my paper. 4、 I apologize for any unclear points in the essay, and I explain the following in the article where the expression is not clear. (1) Substituting A and b into the equation (3-2), getting the transfer function $Wp(s)$, Omitted into the calculation process.
Optional/General comments		