ALTINBAŞ ÜNİVERSİTESİ

MÜHENDİSLİK VE MİMARLIK FAKÜLTESİ

e-bülten

ŞUBAT 2023 | SAYI 64

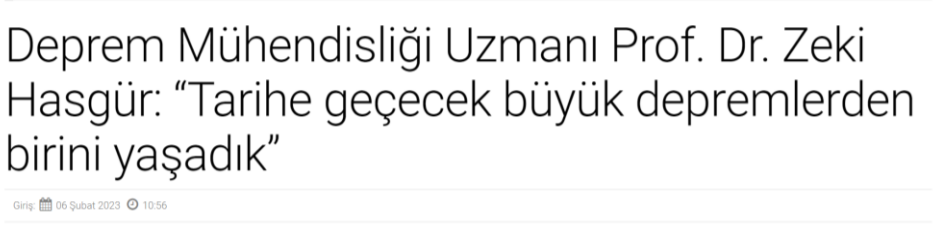
MÜHENDİSLİK VE MİMARLIK FAKÜLTESİ

e-bülten

Medya Haberleri

Ülkemizin 10 ilinde yaşanan büyük depremler için derin üzüntü duyuyoruz. Milletimizin başı sağ olsun. Kaybettiğimiz vatandaşlarımıza Allah'tan rahmet, yaralılara ise şifalar dileriz. Deprem ile ilgili öğretim görevlilerimizin medyada yaptığı değerlendirmeler:

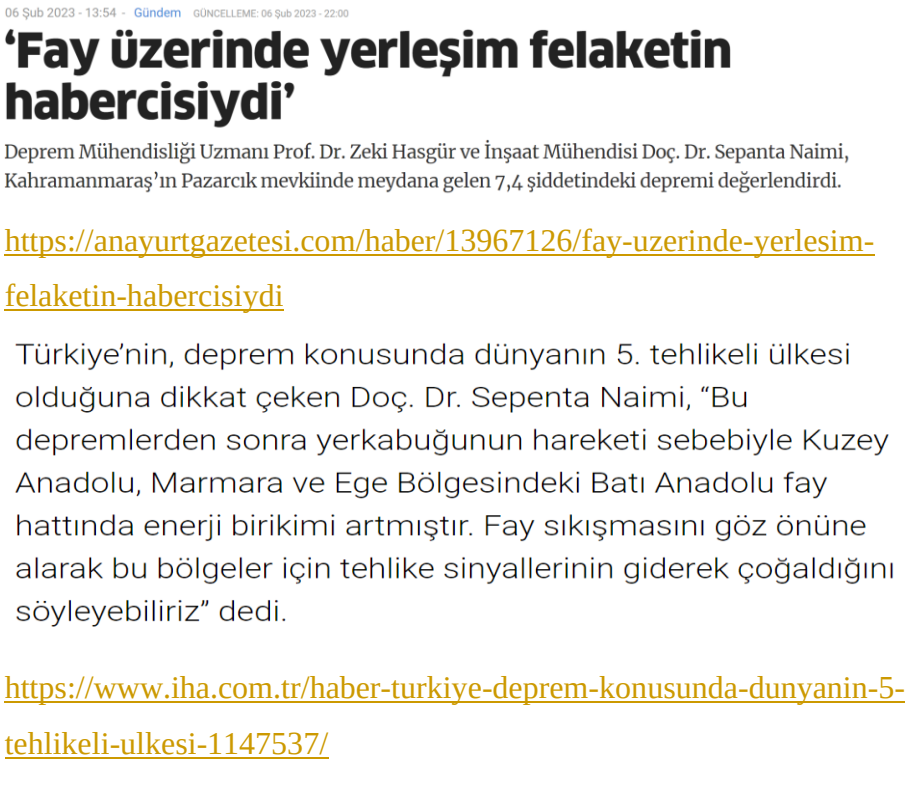
- **Prof. Dr. Zeki Hasgür**


Deprem Mühendisliği Uzmanı Prof. Dr. Zeki Hasgür: "Tarihe geçecek büyük depremlerden birini yaşadık"

Giriş: 06 Şubat 2023 10:56

https://www.iha.com.tr/istanbul-haberleri/700-kisilik-arama-kurtarma-ekibi-sabiha-gokcen-havalimanindan-deprem-bolgesine-gitti-4167339/

- **Doç. Dr. Sepanta Naimi**


06 Şub 2023 - 13:54 - Gündem GÜNCELLEME: 06 Şub 2023 - 22:00

'Fay üzerinde yerleşim felaketin habercisiydi'

Deprem Mühendisliği Uzmanı Prof. Dr. Zeki Hasgür ve İnşaat Mühendisi Doç. Dr. Sepanta Naimi, Kahramanmaraş'ın Pazarcık mevkiinde meydana gelen 7,4 şiddetindeki depremi değerlendirdi.

https://anayurtgazetesi.com/haber/13967126/fay-uzerinde-yerlesim-felaketin-habercisiydi

Türkiye'nin, deprem konusunda dünyanın 5. tehlikeli ülkesi olduğuna dikkat çeken Doç. Dr. Sepenta Naimi, "Bu depremlerden sonra yerkabuğunun hareketi sebebiyle Kuzey Anadolu, Marmara ve Ege Bölgesindeki Batı Anadolu fay hattında enerji birikimi artmıştır. Fay sıkışmasını göz önüne alarak bu bölgeler için tehlike sinyallerinin giderek çoğaldığını söyleyebiliriz" dedi.

https://www.iha.com.tr/haber-turkiye-deprem-konusunda-dunyanin-5-tehlikeli-ulkesi-1147537/

YAYINA HAZIRLAYAN

Arş. Gör. Burcu ORHAN

Öğr. Gör. Büşra BAŞKURT YAVUZ

Arş. Gör. Merve ÇİLTAŞ

- **Dr. Öğr. Üyesi Serdar Ay**

  Adıyaman'a giden Deprem Destek Ekibinin Lideri İş Sağlığı ve Güvenliği Uygulama ve Araştırma Merkez Müdürü Dr. Serdar Ay'da gözlemlerini paylaşarak etkili bir yardım planlamasının nasıl olması gerektiğini anlattı. Serdar Ay; "Öncelikle AFAD merkezinden ya da birebir ulaştığınız kişilerden depremzedelerin ihtiyaçları, şebeke elektriği durumu, diğer gelen yardımların çeşidi ve mevcut acil ihtiyaçlar gibi konularda bilgi alınması büyük önem arz etmektedir. Örneğin; Adıyaman ili özelinde kırsalda, köylerde elektrik şebekesinin deprem nedeniyle hasarlanmış olabileceği göz önüne alınarak köyler için elektrik ısıtıcılar yerine tüplü ısıtıcılar gönderilmeli, imkân varsa jeneratör (depremzedelerin daha kolay iletişime geçmelerinde kullanacakları için powerbanklar için de gerekli), yakıt ve elektrikli ısıtıcı grubu malzeme birlikte gönderilebilir.

  https://www.iha.com.tr/istanbul-haberleri/deprem-yardimlariniz-zayi-olmasin-4187042/

Yayınlar

- Doç. Dr. Hakan Kaygusuz'un Turkish Journal of Medical Sciences dergisinde yayınlanan "COVID-19 modeling based on real geographic and population data" isimli makalesi:

  Emir Baysazan, A. Nihat Berker, Hasan Mandal, **Hakan Kaygusuz** (2023) "COVID-19 modeling based on real geographic and population data," Turkish Journal of Medical Sciences: Vol. 53: No. 1, Article 39. https://doi.org/10.55730/1300-0144.5589

TÜBİTAK

Turkish Journal of Medical Sciences
http://journals.tubitak.gov.tr/medical/
Research Article

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COVID-19 modeling based on real geographic and population data

Emir BAYSAZAN[1], A. Nihat BERKER[2,3,4], Hasan MANDAL[5], Hakan KAYGUSUZ[6,7,*]
[1]TEBIP High Performers Program, Council of Higher Education, İstanbul University, İstanbul, Turkey
[2]Faculty of Engineering and Natural Sciences, Kadir Has University, İstanbul, Turkey
[3]TÜBİTAK Research Institute for Fundamental Sciences, Kocaeli, Turkey
[4]Department of Physics, Massachusetts Institute of Technology, Cambridge, Massachusetts, USA
[5]The Scientific and Technological Research Council of Türkiye (TÜBİTAK), Ankara, Turkey
[6]Department of Basic Sciences, Faculty of Engineering and Architecture, Altınbaş University, İstanbul, Turkey
[7]SUNUM Nanotechnology Research Center, Sabancı University, İstanbul, Turkey

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Background/aim: Intercity travel is one of the most important parameters for combating a pandemic. The ongoing COVID-19 pandemic has resulted in different computational studies involving intercity connections. In this study, the effects of intercity connections during an epidemic such as COVID-19 are evaluated using a new network model.

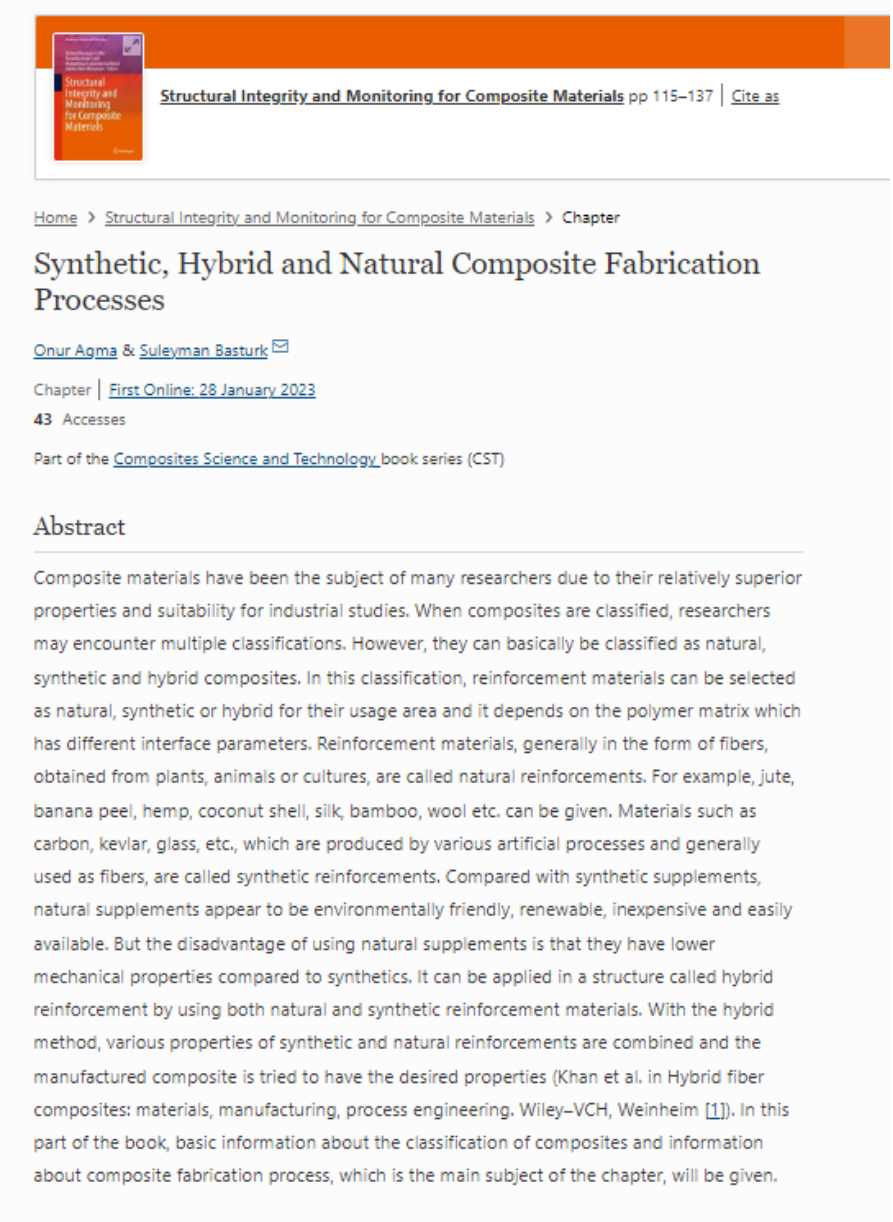
Materials and methods: This model considers the actual geographic neighborhood and population density data. This new model is applied to actual Turkish data by means of provincial connections and populations. A Monte Carlo algorithm with a hybrid lattice model is applied to a lattice with 8802 data points.

Results: Around Monte Carlo step 70, the number of active cases in Türkiye reaches up to 8.0% of the total population, which is followed by a second wave at around Monte Carlo step 100. The number of active cases vanishes around Monte Carlo step 160. Starting with İstanbul, the epidemic quickly expands between steps 60 and 100. Simulation results fit the actual mortality data in Türkiye.

Conclusion: This model is quantitatively very efficient in modeling real-world COVID-19 epidemic data based on populations and geographical intercity connections, by means of estimating the number of deaths, disease spread, and epidemic termination.

Key words: Monte Carlo simulation, epidemic, geographical model, susceptible-infected-quarantine-recovered model, COVID-19

- AUTONOM Müdürü ve Makine Mühendisliği bölüm başkanı Doç. Dr. Süleyman BAŞTÜRK ve AUTONOM Baş Araştırmacısı ve Makine Mühendisliği öğretim elemanı Arş. Gör. Onur AĞMA tarafından yazılan "Synthetic, Hybrid and Natural Composite Fabrication Processes" başlıklı bölüm, Springer Nature'ın "Structural Integrity and Monitoring for Composite Materials" adlı kitabında yayımlanmıştır.



Structural Integrity and Monitoring for Composite Materials pp 115–137 | Cite as

Home › Structural Integrity and Monitoring for Composite Materials › Chapter

Synthetic, Hybrid and Natural Composite Fabrication Processes

Onur Agma & Suleyman Basturk

Chapter | First Online: 28 January 2023

43 Accesses

Part of the Composites Science and Technology book series (CST)

Abstract

Composite materials have been the subject of many researchers due to their relatively superior properties and suitability for industrial studies. When composites are classified, researchers may encounter multiple classifications. However, they can basically be classified as natural, synthetic and hybrid composites. In this classification, reinforcement materials can be selected as natural, synthetic or hybrid for their usage area and it depends on the polymer matrix which has different interface parameters. Reinforcement materials, generally in the form of fibers, obtained from plants, animals or cultures, are called natural reinforcements. For example, jute, banana peel, hemp, coconut shell, silk, bamboo, wool etc. can be given. Materials such as carbon, kevlar, glass, etc., which are produced by various artificial processes and generally used as fibers, are called synthetic reinforcements. Compared with synthetic supplements, natural supplements appear to be environmentally friendly, renewable, inexpensive and easily available. But the disadvantage of using natural supplements is that they have lower mechanical properties compared to synthetics. It can be applied in a structure called hybrid reinforcement by using both natural and synthetic reinforcement materials. With the hybrid method, various properties of synthetic and natural reinforcements are combined and the manufactured composite is tried to have the desired properties (Khan et al. in Hybrid fiber composites: materials, manufacturing, process engineering. Wiley–VCH, Weinheim [1]). In this part of the book, basic information about the classification of composites and information about composite fabrication process, which is the main subject of the chapter, will be given.

- Dr. Öğr. Üyesi Yaser Alaiwi'nin Mathematical Modelling of Engineering Problems dergisinde yayımlanan "Optimized Adaptive PID Controller Design for Trajectory Tracking of a Quadcopter" başlıklı makalesi:

  Altalabani, W., **Alaiwi, Y**. (2022). Optimized adaptive PID controller design for trajectory tracking of a quadcopter. Mathematical Modelling of Engineering Problems, 9(6), 1490-1496.

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Mathematical Modelling of Engineering Problems
Vol. 9, No. 6, December, 2022, pp. 1490-1496
Journal homepage: http://iieta.org/journals/mmep

Optimized Adaptive PID Controller Design for Trajectory Tracking of a Quadcopter

Waleed Altalabani*, Yaser Alaiwi

Department of Mechanical Engineering, Altinbas University, Istanbul 34217, Turkey

Corresponding Author Email: waleedrabeea1986@gmail.com

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Keywords:
adaptive, PID controller, unmanned aerial vehicle, quadrotor

ABSTRACT

Quadcopters have unstable systems, and one of the main reasons for the irregularity of their systems may be the behavior of the output of certain types of control units. But the development that an event in the control methods made the control of these systems very effective to achieve the maximum stability required. Examples of methods with modern controllers we mention here are the linear quadratic regulator (LQR) controller, Besides the (MPC) model predictive controller, there is also the integral proportionally derivative (PID)which we worked on developing in this research. This paper aims to deal with compensation for position tracking error of quadrotor. To address this problem, we designed an adaptive PID controller that enhances the tracking performance and tests the proposed controller on two different trajectories against the performance of the normal PID controller. Through the simulation results using MATLAB the suggested strategy was shown to be effective in lowering the errors associated tracking of intended trajectories in X and Y orientations.

EVATeam Şubat Ayı Faaliyetleri

EVA TEAM Deprem Bölgesi Yardım Faaliyetlerine Katıldı

Altınbaş Üniversitesi, Altınbaş Üniversitesi Öğrenci Dekanlığı, Elektrikli, Otonom ve İnsansız Araçlar Uygulama ve Araştırma Merkezi AUTONOM, EVA TEAM, Altınbaş Öğrenci Konseyi ve Altınbaş İSR ülkemizde gerçekleşen deprem felaketinden etkilenen depremzedelere destek faaliyetlerine katılım sağladı.


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