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**ENGLISH TITLES**

**BIOLOGY**

**High pigments and atroviolacea double mutant of tomato (*Solanum lycopersicum*) with high pigments content**

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**Abstract**

Tomato is known to contain nutritional components with several types of health-promoting actions. Lycopene which is an antioxidant present in tomatoes has been identified as being responsible for the beneficial effect of tomatoes. With the aim of increasing the antioxidants contents of tomato, two dark fruited single recessive mutants were crossed to produce double mutant with higher antioxidants contents. The high pigment (*hp*) mutant of tomato characterized by dark green fruits, when it is immature and deep red mature fruit which is a monogenic mutant of tomato, was crossed with atroviolacea (*atv*) monogenic non-allelic mutant which had the same phenotype. Although it was easy to distinguish the *hpatv* segregating double mutant in the f<sub>2</sub> generation, the conformation of the *hpatv* double mutant was made genetically. The double mutant showed darker phenotype in stem, leaves, and much darker fruits due to higher pigments content. The double mutant qualitatively showed higher pigments content which is of great nutritional value. The detailed estimation of the quantitative differences in pigments of the wild type, single mutants and constructed mutant is recommended.

**Keywords:** High pigment, mutant, tomato, double mutants, antioxidant.

**ENGINEERING**

**Document classification in parallel environments using Java bindings in open MPI**

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## Abstract

This paper describes the high performance computing (HPC) of document search engines that are vectorizing each classified document. The parallelization is achieved by exploiting the parallel and distributed computing environments of collective multiple processes that are implemented by using Java message passing interface (MPI) bindings of openMPI. A parallelism model of manager/worker is implemented for obtaining the load balancing, as well as the analysis and benchmarking are achieved in our parallelism profiling model that is designed for the implementation. Two output of the experimental results are shown:- the parallel processing performance with the efficiency of 80%, and the profiling results that show the utilizations and overheads in our parallelism model.

**Keywords:** Java MPI bindings, Load-Balancing, Manager/Worker-style, Profiling parallelism, Vectoring classification.

## Writing and editing Arabic Text in Adobe Animate cc

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## Abstract

Adobe is a software development company established in 1982, and has developed a number of software applications for use in various fields. The program Animate cc (flash previously) is one of the most prominent products and is widely used in the design of programming and producing best animation websites.

Adobe has included in Flash software releases (**Adobe Flash Professional CS6, Adobe Flash Professional CS5.5, Adobe Flash Professional CS5 and previous releases**) a text-processing library called Text Layout Framework (TLF). This library supports Arabic-language writing from right to left and supports left-to-right writing of numbers and texts written from left to right such as Latin numbers and letters. However, the versions of **Animate cc** have not include the text-formatting library, which resulted in the inability of designers and programmers to produce interactive Arab applications.

In this research, we designed a component for writing in Arabic called Arabic Text component that contains a wide range of fonts, text control properties and the addition of aesthetic and artistic effects of Arabic characters that are not included in the previous versions of Flash. The Arabic text component is included once in the flash program components, then it is used for writing by inserting it into stage.

**Keywords:** Writing Arabic text, editing Arabic text, Adobe Animate CC, Adobe Flash, Text Layout Framework, TLF.

# MATHEMATICS

## **q-analogue modified Laguerre and generalized modified Laguerre polynomials of one variable**

**Fadhle B.F. Mohsen, Mubarak A.H. Alqufail and Fadhl S.N. Alsarahi**

Department of Mathematics, Faculty of Education, Aden University, Aden, Yemen

### **Abstract**

The  $q$ -Laguerre polynomials are important  $q$ -orthogonal polynomials whose applications and generalizations arise in many applications such as quantum group (oscillator algebra, etc.),  $q$ -harmonic oscillator and coding theory.

In this paper, we introduce the  $q$ -analogue modified Laguerre polynomials and generalized modified Laguerre polynomials of one variable. Some recurrence relations and  $q$ -Laplace transforms for these polynomials are derived.

**Keywords:**  $q$ -analogue modified Laguerre polynomials, generating functions, recurrence relations,  $q$ -Laplace transforms.

## **Study of the relation in the recurrent Finsler space of different orders**

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### **Abstract**

In the present paper, we define a  $R^h$ -recurrent space,  $R^h$ -birecurrent space,  $R^h$ -generalized birecurrent space of the first kind,  $R^h$ -generalized birecurrent space of the second kind,  $R^h$ -special generalized birecurrent space of the first kind and  $R^h$ -special generalized birecurrent space of the second kind. The aim of this paper is to study the relation between the above spaces.

**Keywords:**  $R^h$ -recurrent space,  $R^h$ -birecurrent space,  $R^h$ -generalized birecurrent of the first kind,  $R^h$ -generalized birecurrent of the second kind,  $R^h$ -special generalized birecurrent of the first kind and  $R^h$ -special generalized birecurrent of the second kind.

## Study of certain types of $K^h$ -birecurrent Finsler spaces (II)

Fahmi Yaseen Abdo Qasem, Gamal Abobakar Abdallah Bawazeir and Meqdad Ahmed  
Abdullah Ali

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### Abstract

Qasem and Ali [15] defined the  $k^h$ -BR- affinely comented space. In thin space, they obtained the condition for some tensors to be birecurrent, proved some tensors are birecurrent, gave new definition for some tensors and found some identities. Also they defined for  $k^h$ -BR-Landsberg space and obtained various identities in such space.

In this paper we have used the property of  $K^h$ -BR- $F_n$  in P2-like space and  $P^*$ -Finsler space. We have obtained different theorems for some tensors to be satisfying the conditions of the above spaces and various identities in such spaces were also obtained.

**Keywords:**  $K^h$ -Birecurrent Space, P2-like  $K^h$ -Birecurrent Space and  $P^*$ - $K^h$ -Birecurrent Space.

## MEDICINE

### Study of patterns and age distribution of breast cancer in South Yemen

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Pathology Department, Faculty of Medicine & Health Sciences, Aden University

### Abstract

Breast cancer is the most common malignancy type diagnosed in women in developed countries and the second most common type diagnosed in developing countries.

The aim of this study is to determine the pattern of breast cancer, to correlate the age distribution with the histological subtypes, and to compare our study with other geographic regions.

It is a retrospective study, the data were collected from the records of the cancer Registration Center including 489 breast cancer patients during 10 years from (2002-2011)

The most common subtype of breast cancer was invasive ductal carcinoma (88.1%), followed by invasive lobular carcinoma (7.0%). The mean age of the patients with breast cancer was  $49.5 \pm 10.7$ , the common age group was (63.0%) between 30-50.

Invasive ductal carcinoma is the commonest histological subtype affecting young to middle age group, while invasive lobular carcinoma is the commonest histological subtype affecting older age group.

**Keyword:** breast cancer, histological sub types, age, south Yemen.



# Study of pattern and clinical manifestations of lymphoma in adults in South Yemen

Nafisa Awadh Mansoor

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## Abstract

Lymphoid neoplasms are clonal lymphoproliferations and are heterogeneous in clinical presentation, histopathology, immunophenotype, and prognosis.

The objectives of the study are to determine the subtypes of lymphoma at the National Oncology Center in Aden and to analyze the clinical parameters including age, gender, anatomic distribution (nodal and extranodal), signs, symptoms, grading, and to compare our results with other geographic regions.

A total number of 127 cases of lymphoma were collected during two years, the diagnosis was based on histological morphology following the International Working Formulation Classification System. Data were subjected to statistical software; Statistical Package for Social Sciences SPSS version 19. Age, gender, type of lymphoma, anatomic location, signs and symptoms were computed in term of frequency.

This is a retrospective study of 127 cases of lymphoma during the years 2013-2014, the ratio of NHL to HL was 1.59: 1. NHL was 61.4%, 38.6% were males and 22.8% were females, with a male to female ratio of 1.68:1. Hodgkin lymphoma was 38.6%; 22.0% were males and 16.5% were females, with a male to female ratio was 1.3:1.

The most common age groups affected for NHL in both sexes was  $\geq 60$  & 45-59, 22.8% & 15.0%, respectively, together accounting for more than 50% of NHL, while the most common age groups affected for HL was 30-44 & 15-29, 14.2% & 10.2% respectively, together accounting for more than 50% of HL. According to the grading of NHL, high grade lymphoma was 14.1%, intermediate grade 48.7%, low grade 37.2%. Regarding the subtypes of HL, the most common subtypes were mixed cellularity and nodular sclerosis 57.1% & 38.8% respectively. NHL with nodal presentation was seen in 39.37% of cases, and extranodal 22.04%, while HL mainly was manifested as nodal in 37.79% and only 0.78% extranodal. Swelling in neck, axilla, groin was the most common symptom for NHL and HL 48.7% & 67.3% respectively. Anemia was the most common sign for NHL and HL (62.8% & 67.3% respectively), followed by hepatomegaly and splenomegaly in HL (38.8% & 51.0% respectively).

Non-Hodgkin lymphoma was twice the Hodgkin lymphoma. NHL was the most common in elder age group, while HL was in younger age group. Histological grade of NHL revealed the highest frequency of intermediate grade. Mixed cellularity was the most common subtype of HL. Nodal presentation predominate than extranodal. Lymphoma presents commonly as lymphadenopathy, fever, wt. loss, hepatomegaly, splenomegaly.

**Keywords:** Lymphoma, Non-Hodgkin, Hodgkin, grading, clinical manifestations.

## **Study of risk factors of abruption placenta in Al-wahda teaching hospital, Aden**

**Huda Abood Basorra**

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### **Abstract**

The aim of this study is to determine the prevalence and associated risk factors of abruption placenta in Al-Wahda Teaching Hospital in Aden Governorate, from 1<sup>st</sup> of November 2011 to 30<sup>th</sup> of November 2012.

A case control study was performed for 33 of abruption placenta cases with 165 control cases, conducted at the Department of Obstetrics and Gynecology, Al-Wahda Teaching Hospital. Out of 6765 deliveries included in the study period, 33 (4.88%) were complicated by placental abruption. Most complications occurred were urgent and in need of massive blood transfusion. The most frequent complication were Postpartum hemorrhage (51.52%), cesarean section (42.43%), hemorrhagic shock (18.18%), hysterectomy (12.12%), renal failure (6.06%), pulmonary embolism (3.03%), and congestive cardiac failure (3.03%). There was one maternal mortality case in the period of study from abruption placenta.

Women aged more than 35 were more likely for experiencing abruption placenta, while grand multipara (> 5 children) were at higher risk for abruption placenta. Gestational age < 37 weeks increased the risk by eight folds. The risk of abruption placenta increased by six folds in hypertensive patients, as well as those with previous history of abruption and previous abortion. Polyhydramnios and abdominal trauma increased the risk of abruption placenta by two folds.

The fetal outcome was characterized by low body weight < 2500 gram seen in 20 cases (60.6%), low APGAR score at 5<sup>th</sup> min < 7 was seen in 4 cases (21.05%), and stillbirth rate in 14 cases (42.42%).

**Keywords:** Abruption placenta, maternal mortality, hemorrhage, hypertension, stillbirth.

## **Uterine rupture: A five year review at Al-sadaqa teaching hospital, Aden**

**Huda A. Basorra, Nahla S. Alkaaky, Entesar M. Abdulla and Fatima Sh. Aman**

Department of Gynecology & Obstetrics, Faculty of Medicine & Health Sciences, University of Aden

### **Abstract**

The aim of the study is to determine the frequency, related risk factors, management modalities and fetomaternal outcome of uterine rupture.

This is a retrospective descriptive study using data from the medical birth registration at Al-Sadaqa Teaching Hospital, Aden, during a period of five years from 1<sup>st</sup> Jan 2012 to 31<sup>st</sup> December 2016.

Out of 31905 deliveries over the study period from 1<sup>st</sup> of Jan 2012 – 31<sup>st</sup> of Dec 2016, 84 cases had uterine rupture, giving an incidence of 0.26% or 1 in 323 deliveries. Maternal age group 20 – 34 years represented (58.3%), and gestational age of 37 – 42 weeks represented (84.5%), regarding the parity (69.0%) having (1-3 children), (50.0%) were with one scar, while previous two scars and history of no scars represented by (21.4%) and (22.6%) respectively, and (6.0%) have three scars. Antenatal scar  $\geq$  4 visits found in (60.7%), while (39.3%) having  $\geq$  4 visits.

Most cases of rupture uterus (81.0%) were occurred intra partum. Big baby constitutes 27.4%, malpresentation and malposition was 19.0%, short inter-pregnancy interval less than one year was 16.7%, labour induced by uterotonic agent represented by 10.7%, from them 5 cases were outside our hospital, 4 of them on scared uterus. Contracted pelvis occur in 9.5%, obstructed labour and delayed in receiving intra hospital medical care registered 6.0% for each one. Finally congenital uterine abnormalities and abdominal trauma represented the lowest percentage 1.2% for each one.

Unfortunately there were two cases died due to rupture uterus. About 66.7% delivered alive babies and 33.3% of babies were lost. Repair was done for 75.0%, subtotal hysterectomy was done for 19.0%. Repair with tubal ligation and total hysterectomy were done for 2.4% for each one.

**Keywords:** Contracted pelvis, cesarean section, hysterectomy, obstructed labor, uterine rupture and uterotonic agent.

## **Age and sex differences among patients with metabolic Syndrome in Hadhramout, Republic of Yemen**

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### **Abstract**

The aim of our work is to determine the frequency of metabolic syndrome with age and sex difference analysis. This is a cross-sectional study conducted at Al-Rayan Hospital, Mukalla, Hadhramout, Republic of Yemen, from 4/2013 to 10/2014. Metabolic syndrome was estimated according to the International Diabetes Federation (IDF) criteria. of 702 patients, 239 were diagnosed as metabolic syndrome (34%), females were more than males (52.7%, 47.3% respectively), and the mean age of males was significantly higher than that of females. Raised waist circumference was present in all cases, and was higher in males, followed by

diabetics with no significant difference. This was followed by hypertension, systolic and diastolic blood pressures were significantly higher in males, followed by triglycerides which was non-significantly higher in males, the least frequent component was HDL which was significantly lower in males than females. A percentage of 50% and or more of males and female patients had four metabolic syndrome components. The percentage of metabolic syndrome was 34%. It was more common in females which affected by the syndrome earlier in age than males. Most patients had more than three component of the syndrome.

**Keywords:** metabolic Syndrome, Age, Sex, Hadhramout, Yemen.

## PHYSICS

### Non-isothermal crystallization kinetics of $\text{Cd}_{10}\text{Se}_{90}$ chalcogenide glass

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#### Abstract

The structure and kinetics of the crystallization reaction of amorphous  $\text{Cd}_{10}\text{Se}_{90}$  were studied at different heating rates (5–30 K/min) under non-isothermal conditions by X-ray powder diffraction, scanning electron microscopy (SEM) and differential thermal analysis (DTA) techniques. The Johnson–Mehl–Avrami (JMA) and its conversional models were used to describe the DTA crystallization data. A strong heating rate dependence of the activation energy was observed when the data were analyzed using Matusita method. This variation of the activation energy was confirmed by the application of the isoconversional methods of Kissinger–Akahira–Sunose (KAS), Flynn–Wall–Ozawa (FWO), Tang, Starink, and Friedman. These methods showed that the activation energy of crystallization is not constant but varies with the degree of conversion and hence with temperature. This variation indicates that the transformation from amorphous to crystalline phase is a complex process involving different mechanisms of nucleation and growth.

**Keywords:** Crystallization kinetics, Chalcogenide glass; Activation energy, isoconversional methods.

### Moisture and temperature effects on rocks materials and natural erosion energy

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## Abstract

Materials interact with pollutant in a very complex manner, the possibility of erosion, adsorption, desorption, transportation, deposition, and phase change will appear because of the interaction between the pollutant and the material surface. The effect of many other environmental effects also appear, like the effect of rain water in breaking away tiny rock particles (grit productivity). All the actions mentioned or any one of them may cause high damage or weaken the structure. This research highlights the importance of specific physical properties and material weakness, the effect of specific environmental factors (humidity, rain, and temperature) on materials, such as building materials and the potential occurrence places of cracks in the material, by knowing the quality of the material.

**Keywords:** Theoretical Study; hygrothermal model; Energy; Erosion; Matlab.

## Mathematical analysis study of physical parameters and water quality index for groundwater quality monitoring in coastal Hadhramout –Yemen

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## Abstract

Groundwater wells are the major source of drinking water in Hadhramout-Yemen. The current study assessed the quality of fifty-five water wells data for coastal Hadhramout-Yemen. The samples were tested for physical parameters such as color, Hydrogen ion concentration (pH), electrical conductivity (EC), turbidity (Turb) and total dissolved solids (TDS). This assessment is based on comparing water quality of physical parameter values to the Yemeni standards, calculating the water quality index (WQI) for each well and the correlation coefficients (R) between each pair of the selected physical parameters. The correlation coefficient between (WQI), and the selected physical parameters was also calculated. The percentage of compliance to the Yemeni standards in water samples varies from 71.19 % for TDS to 100% for PH. The WQI reflects that most of the samples (forty-nine) are of good and excellent quality. A good relationship was found (simple linear regression) between the color and the turbidity. The current results show that all physical parameters of drinking water are more or less correlated with each other and the WQI, is a very useful and easy tool for monitoring drinking water.

**Keywords:** Water quality parameters, Regression equation, Correlation coefficient, water quality index, Hadhramout, Yemen

## ARABIC TITLES

### AGRICULTURE SCIENCES

#### **Effect of some cowpeainter cropping systems with maize on Land efficiency**

**Maged Saeed S. Bamuaafa<sup>(1)</sup>, Rakeba Mohamed A. Fadel<sup>(1)</sup> and Basel Abdullah S.  
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<sup>(2)</sup>Livestock Research Center, Lahej Gov.

#### **Abstract**

Two field Experiments were carried out at the Research Farm of Nasser's Faculty of Agricultural Sciences, University of Aden (Delta Tuban) Lahej Governorate during 2015/2016 and 2016/2017 seasons to study the effect of intercropping patterns on yield and some yield components and competitive relationships of maize and cowpea. This experiment included three interplanting systems (1:1, 2:1 and 1:2) for maize and cowpea respectively, in addition to sole cropping treatment.

The results showed that the different interplanting systems significantly reduced biological yield, grain and seed yield/hectare of the two crops as well as number of pods/plant of cowpea. Grain index (1000 kernel weight) of maize was significantly increased by interplanting systems, except interplanting system (1:2) compared with pure planting in both seasons. The highest biological and grain yield of maize were obtained under (2:1) pattern, while biological and seed yield of cowpea significantly increased by (1:2) pattern compared with the other intercropping systems in both seasons. Land equivalent ratio (LER) values indicated that intercropping cowpea with maize gave yield advantage at all intercropping patterns. Maize was the dominant intercrop, while cowpea was the dominated intercrop.

**Keywords:** Intercropping systems, maize, cowpea, Land Equivalent Ratio.

### BIOLOGY

#### **Identification of tomato, pepper and eggplant affecting the pathogens in Lahj Governorate**

**Mohammed Ali Mohammed Al-Sunaidi**

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## Abstract

The fungal pathogens found on tomato plants in Fayush and Pepper plants were identified in Al-Manasra area and Eggplant plants in Al-Lahat area in Lahj Governorate, during the period October 2016 to January 2017. *Fusarium oxysporum*, which is responsible for vesicular wilt disease, was isolated. Two strains were identified: one affects the tomato disease *F. oxysporum* f. sp. *Lycopersici* and the other strain affects the fusarium *Fusarium oxysporum* f. sp. *Vasinfectum*, in addition to the isolation of fungus *Leveillula taurica* causing the disease of white flour on Eggplant.

**Keywords:** Tomato, Pepper, Eggplant, fungus, *Fusarium oxysporum*, *Leveillula taurica*, Lahj, Yemen.

## Aeffect of the seeds area collection and plantation media on the germination and growth of *Caessalpinia pulcherrima* L.

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## Abstract

An experiment was carried out during agricultural season 2016/2017 in a farm in Jaawala, an area situated in Lahej governorate in order to evaluate the effect of collected seeds area from Kamasry nursery in Aden Government , Warzan nursery in Taiz Government and various media on germination and growth of *Caessalpinia pulcherrima*L.

The experiment included five treatments. They are as follow: (sand, alluvium, sand + alluvium+ sawdust at the rate of 2:1:1, sand + alluvium+ poultry manure at the rate of 2:1:1 and the control is normal soil normal soil ). In a completely randomized design of four replications with taking into consideration the following indicators : the percentage of germination, the rootlet length, the shoot length, the rootlet dry weight, the shoot dry weight and the total seed dry weight , the study results showed that the media that contained the media mixture of ,sand + alluvium+ poultry manure at the rate of 2:1:1created clearer and better results

In the already mentioned indicators compared with the control.

**Keywords:** *Caessalpinia pulcherrima*L., Plantation Media, the Germination , seedling growth.

# **ENGINEERING**

## **Al-zabor construction one of the old Yemeni building styles: Analysis study**

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### **Abstract**

Al-zabor construction is one of the oldest multi – stories construction technique in Yemen, This technique is based on mixing clay with 30% sand, submerged in water for period time, and then begins to build mud walls on a stone base, in the form of building layers by wooden molds.

The building process is performed by filling the wooden molds with mud thrown by hand strongly; to achieve adhesion and connectivity with the foundation stone or mud bottom tier.

After the layer dries relatively down, the construction begins to build another layer above it, and stacked layers successively until the of the structural construction complete is completed.

**Keywords:** Clay, Al-zabor, Multi-storey building, Sa'ada.

# **FOOD SCIENCES**

## **Effect of composite flour of wheat (Buhooth 13) and naked Barley flour on rheological properties and bread-making characteristics**

**Abdulmageed Bagash Abdullah, Jalal. Ahmed Fadleand Abdulfattah Nagy Alhumaidy**

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### **Abstract**

This study was carried out to investigate the effects of partial replacement of wheat flour (Buhooth 13) with naked barely the flour on chemical and rheological of composite flour, and qualitative and organoleptic characteristics of produced bread, using different replacement levels. Different types of composite flour were prepared via partial replacement of wheat flour (5, 15, 25 and 35%) with naked barley flour.

Experimental obtained results showed positive relationships between content values (ash, protein, fat and crude fiber) and percentages of naked barley flour. Farinogram properties; such as dough water absorption, development time, stability and degree of softness (degree of resistance to kneading – critical kneading rate) were increased as an amount of



replaced level increased. Whereas, Extensogram parameters showed that as naked barley levels increased in the blend, resulted in increased energy, elasticity (resistance to extension of dough), energy of dough and relative number (ratio of resistance to extensibility). Reduction in extensibility of dough was noted as levels of replacement and as fermentation time increased, but it was contributed to reduction in extensibility of dough.

In respect of characteristic of bread specific volume, the obtained results showed a significant gradual reduction in values of specific volume as levels of replacement increased

Organoleptic evaluation showed an overall reduction in the total sensory characteristics as levels of replacement elevated.

Organoleptic evaluation revealed that composite flour with 5% naked barley flour was considered, to be the best treatment since excellent results were recorded, compared with the other treatments; therefore, can be recommended.

**Keywords:** Naked Barley Rheological, Bread-Making, Extensogram parameters, Farinogram properties, organoleptic characteristics.

## MATHEMATICS

### **Geometrical invariant element's in theory 2F- mapping between Riemannian spaces $A_n$ which have tensor $(F)^3 = 0$**

**Abdelnaser A . Haider**

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#### **Abstract**

In this paper we define Riemannian space that's exist in its tensor  $(F)^3 = 0$ , and remain the necessary and sufficient conditions in order to be exist 2F- mapping, between Riemannian spaces  $\bar{A}_n, A_n$  which have tensors  $(F)^3 = 0$ , later fined Geometrical invariant element's in 2F-mapping between Riemannian spaces  $\bar{A}_n, A_n$  with have tensors  $(F)^3 = 0$ .

**Keywords:** Riemannian space of tensor  $(F)^3 = 0$ , 2F- mapping

# OIL

## Using correlation analysis and experimental mathematical models for estimating oil reserves in Syrian oil reservoirs

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### Abstract

This study shows a new method for estimating oil reserves for wells and reserves as well as for forecasting wells and reservoirs production using correlation analysis and empirical mathematical modeling based on actual production data.

The study focuses on the first stage of working history while almost of existing studies solved, such issues just having a long data history.

The study resulted in that the reserves and production profiles can be estimated with high accuracy factor (up to 90%) using both empirical modelling and correlation analysis between well reserves and their initial or maximum production.

**Keywords:** reserves, production, well, reservoir, production data, analytical correlation, mathematical modelling.